ALAGAPPA UNIVERSITY

(Accredited with 'A+' Grade by NAAC (with CGPA: 3.64) in the Third Cycle and Graded as category - I University by MHRD-UGC)
(A State University Established by the Government of Tamilnadu)

KARAIKUDI – 630 003

DIRECTORATE OF DISTANCE EDUCATION

M.Sc. [Information Technology]

Second Year – Fourth Semester

31344- Web Technology Lab

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Reviewer:

WEB TECHNOLOGY LAB

Syllabi

BLOCK 1

1. Simple tables
2. Complex tables
3. Lists
4. Alignment properties
5. Resizing property
6. Forms
7. Internal style sheet using frame.
8. External style sheet
9. Inline style sheet
10. Javascript code to validate the user input form
11. Javascript to print the string for the number input
12. Javascript to display a dynamic html page.

BLOCK 2

13. Dhtml code with javascript to define a user defined function for sorting the values in an array.
14. Dhtml code with javascript to display the calendar
15. Xml file: display the book information
16. Java Beans
17. Javabean program in Web Application

BLOCK 3

18. Servlet program with Execution procedure
19. Server side program: send email
20. Session handling
21. Cookies:getting and setting

BLOCK 4

21. Simple JSP
22. JSP program with jdbc: Registration form
23. Develop an application for JSP: JSP -servlet communication

BLOCK 5

24. Database connectivity using mysql(CURD operation) without interface
25. Database programming using JDBC(create, read,update, delete)

NOTES

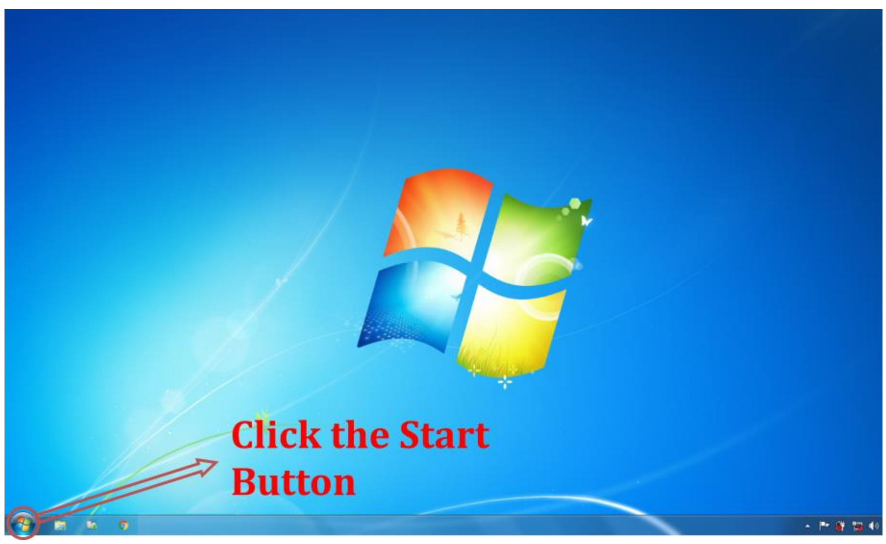
Web Technology

Introduction

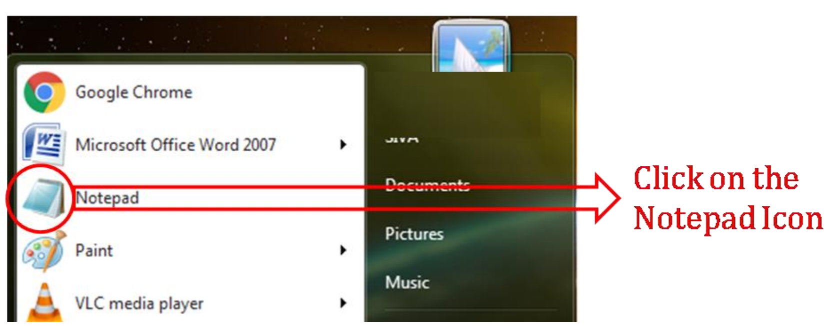
Web development involves the construction of both dynamic and static webpages using different languages. For designing web pages the languages such as HTML, DHTML, CSS, and scripting languages are used. For advanced and interactive web content especially business and commercial web applications the languages like Java, JSP and databases can be used. This material contains the practical exercises for basic and advances web development which covers Html tags, core java concepts along with scripting and JDBC.

The following excercise shows the demo for Html program in windows environment.

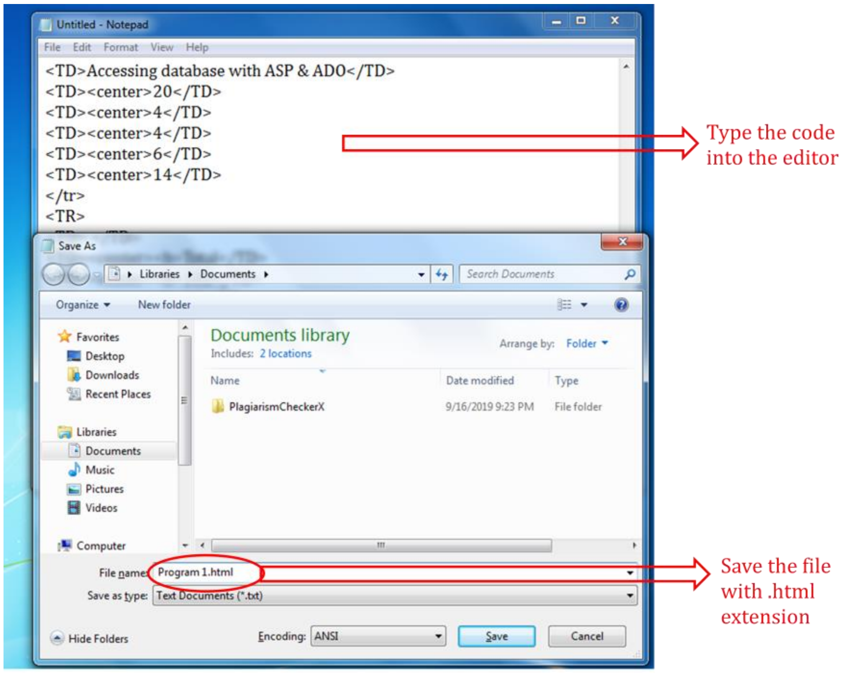
Step 1: Click the Start Button to pop up the menu



Step 2: Click the notepad icon to launch the Text editor



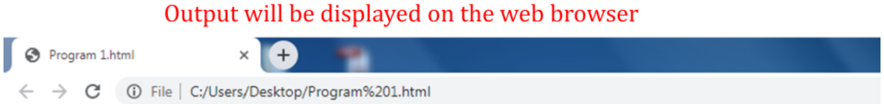
Step 3: Write the code into the text editor and save the file with .html extension



Step 4: Double click on the file to view the output through web browser



Output will be displayed on the web browser



Specification Table with Hours and Marks

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction to Internet Technology	12	4	4	0	8
II	Basics of HTML & CSS	16	0	2	6	8
III	Active Server Pages 3.0	16	4	8	0	12
IV	Server Side Coding with VBScript and XML	18	2	4	8	14
V	ASP Objects & Components	20	4	4	6	14
VI	Accessing database with ASP & ADO	20	4	4	6	14
	Total	**102**	**18**	**26**	**26**	**70**

NOTES

1. Write the html code to display a simple table

Simple table.html

```
<html>

<body>

<TABLE BORDER="1" CELLPADDING="2">

<CAPTION ALIGN="Top"><b>Specification Table with Hours and
Marks<CAPTION>

<TR>

<TH ROWSPAN="2">Unit No.</TH>

<TH ROWSPAN="2">Unit Title</TH>

<TH ROWSPAN="2">Teaching Hours</TH>

<TH Colspan="4">Distribution of Theory Marks</TH>

</TR>

<TR>

<TD>R Level </TD>

<TD>U Level </TD>

<TD>A Level </TD>

<TD>Total Marks </TD>

</TR>

<TR>

<TD> <center>I </TD>

<TD>Introduction to Internet Technology</TD>

<TD><center>12</TD>

<TD><center>4</TD>

<TD><center>4</TD>

<TD><center>0</TD>

<TD><center>8</TD>

</TR>
```

```
<TR>
<TD> <center>II </TD>
<TD>Basics of HTML & CSS</TD>
<TD><center>16</TD>
<TD><center>0</TD>
<TD><center>2</TD>
<TD><center>6</TD>
<TD><center>8</TD>
</TR>
<TR>
<TD> <center>III </TD>
<TD>Active Server Pages 3.0</TD>
<TD><center>16</TD>
<TD><center>4</TD>
<TD><center>8</TD>
<TD><center>0</TD>
<TD><center>12</TD>
</TR>
<TR>
<TD> <center>IV </TD>
<TD>Server Side Coding with VBScript and XML</TD>
<TD><center>18</TD>
<TD><center>2</TD>
<TD><center>4</TD>
<TD><center>8</TD>
<TD><center>14</TD>
</TR>
<TR>
```

```
<TD> <center>V </TD>

<TD>ASP Objects & Components</TD>

<TD><center>20</TD>

<TD><center>4</TD>

<TD><center>4</TD>

<TD><center>6</TD>

<TD><center>14</TD>

</TR>

<TR>

<TD> <center>VI </TD>

<TD>Accessing database with ASP & ADO</TD>

<TD><center>20</TD>

<TD><center>4</TD>

<TD><center>4</TD>

<TD><center>6</TD>

<TD><center>14</TD>

</tr>

<TR>

<TD> </TD>

<TD><center><b>Total</TD>

<TD><center><b>102</TD>

<TD><center><b>18</TD>

<TD><center><b>26</TD>

<TD><center><b>26</TD>

<TD><center><b>70</TD>

</tr>

</TABLE>

</body> </html>
```

Output

Specification Table with Hours and Marks

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction to Internet Technology	12	4	4	0	8
II	Basics of HTML & CSS	16	0	2	6	8
III	Active Server Pages 3.0	16	4	8	0	12
IV	Server Side Coding with VBScript and XML	18	2	4	8	14
V	ASP Objects & Components	20	4	4	6	14
VI	Accessing database with ASP & ADO	20	4	4	6	14
	Total	**102**	**18**	**26**	**26**	**70**

2. Write the html code to display a complex table

Complex table.html

```
<html> <head></head>

<body>

<table>  <caption>A complex table</caption>

<thead> <tr> <th colspan="3">Invoice #123456789</th> <th>14 Sep
2019 </tr>

<tr> <td colspan="2"> <strong>Pay to:</strong><br> Acme Billing
Co.<br> 123 Main St.<br> Cityville, NA 12345 </td>

 <td colspan="2"> <strong>Customer:</strong><br> John Smith<br> 321
Willow Way<br> Southeast Northwestershire, MA 54321 </td>

</tr> </thead> <tbody> <tr> <th>Name / Description</th>

 <th>Qty.</th>  <th>@</th>  <th>Cost</th> </tr>

<tr> <td>Paperclips</td>  <td> 1000</td>  <td> 0.01</td>

<td> 10.00</td> </tr>  <tr> <td>Staples (box)</td>

<td>100</td> <td>1.00</td>  <td>100.00</td> </tr> </tbody>

 <tfoot> <tr> <th colspan="3">Subtotal</th> <td> 110.00</td> </tr>

 <tr> <th colspan="2">Tax</th> <td> 18% </td> <td>19.80</td> </tr>

<tr> <th colspan="3">Grand Total</th>  <td>$ 129.80</td> </tr> </tfoot>
</table>

  </body> </html>
```

<u>Output</u>

Sample table

Invoice #123456789		**14 Sep 2019**	
Pay to: Acme Billing Co. 123 Main St. Cityville, NA 12345		**Customer:** John Smith 321 Willow Way Southeast Northwestershire, MA 54321	
Name / Description	**Qty.**	**@**	**Cost**
Paperclips	1000	0.01	10.00
Staples (box)	100	1.00	100.00
Subtotal			110.00
Tax		8%	8.80
Grand Total			$ 118.80

3. Write the html code to display the list

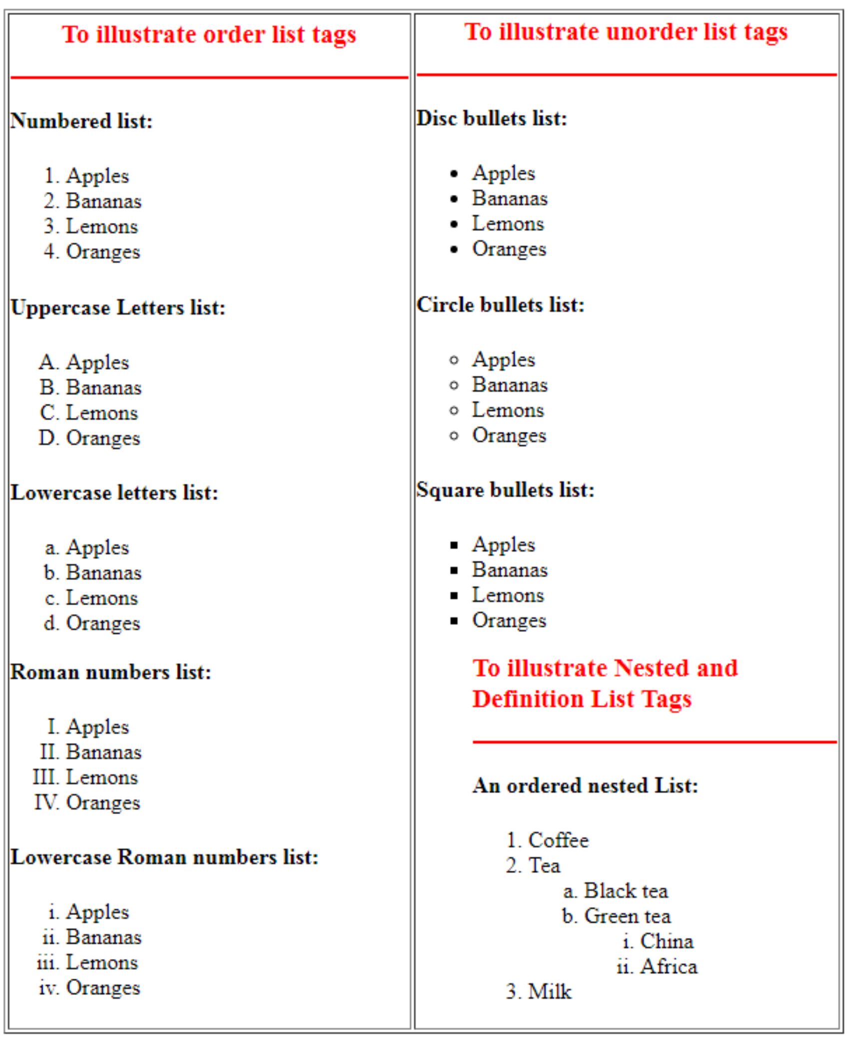
<u>List.html</u>

```
<html>
<head> </head>
<title> List tag </title>
<body>
<table border="1"  width="600" text align="center"><tr ><td
widht="300">
<h3 align="center" style="color:red">To illustrate order list tags</h3>
<hr COLOR="RED">
<h4>Numbered list:</h4>
<ol>
<li>Apples</li>
<li>Bananas</li>
<li>Lemons</li>
<li>Oranges</li>
</ol>
<h4>Uppercase Letters list:</h4>
<ol type="A">
<li>Apples</li>
<li>Bananas</li>
<li>Lemons</li>
<li>Oranges</li> </ol>
<h4>Lowercase letters list:</h4>
<ol type="a">
<li>Apples</li>
<li>Bananas</li>
<li>Lemons</li>
<li>Oranges</li> </ol>
```

```
<h4>Roman numbers list:</h4>
<ol type="I">
<li>Apples</li>
<li>Bananas</li>
<li>Lemons</li>
<li>Oranges</li>
</ol>
<h4>Lowercase Roman numbers list:</h4>
<ol type="i">
<li>Apples</li>
<li>Bananas</li>
<li>Lemons</li>
<li>Oranges</li>
</ol>
</td>
<td width="300">
<title> Unorder List </title>
<h3 align="center" style="color:red">To illustrate unorder list tags</h3>
<hr COLOR="RED">
<h4>Disc bullets list:</h4>
<ul type="disc">
<li>Apples</li>
<li>Bananas</li>
<li>Lemons</li>
<li>Oranges</li>
</ul>
<h4>Circle bullets list:</h4>
<ul type="circle">
<li>Apples</li>
<li>Bananas</li>
<li>Lemons</li>
<li>Oranges</li>
</ul>
<h4>Square bullets list:</h4>
<ul type="square">
<li>Apples</li>
<li>Bananas</li>
<li>Lemons</li>
<li>Oranges</li>
<h3  style="color:red"> To illustrate Nested and Definition List Tags
</h3>
<hr color="red">
<h4> An ordered nested List: </h4>
<ol>
```

```
<li> Coffee </li>
<li> Tea
<ol type= "a">
<li> Black tea </li>
<li> Green tea </li>
<ol type= "i" >
<li> China </li>
<li> Africa </li>
</ol>
</ol>
<li> Milk </li>
</ol>
</ul></td></tr></table>
</body>
</html>
```

<u>Output</u>



4. Write the html code with image alignment properties

Images.html

```
<html>

<head> <title> Image Tag </title> </head>

<body>

<h3 align="center" style="color:red"> To illustrate image tags</h3> <hr>

<p> <img src=" C:\Users\Public\Pictures\Sample Pictures\Sample pic.jpg"
align="right" height="100" width="100"/>

This image is right aligned with the text

</p> <br><br><br><br><hr> <p>

<img src="C:\Users\Public\Pictures\Sample Pictures\Sample pic.jpg"
align="left" height="100" width="100"/>

This image is left aligned with the text </p>

<br><br><br><br><hr>

This image is center aligned with the text.

<img src="C:\Users\Public\Pictures\Sample Pictures\Sample pic.jpg"
align="middle" height="100" width="100"/>

<br><br><br><br><hr>

This image is bottom aligned with the text.

<img src="C:\Users\Public\Pictures\Sample Pictures\Sample pic.jpg"
align="bottom" height="100" width="100"/>

<br><br><br><br><hr>

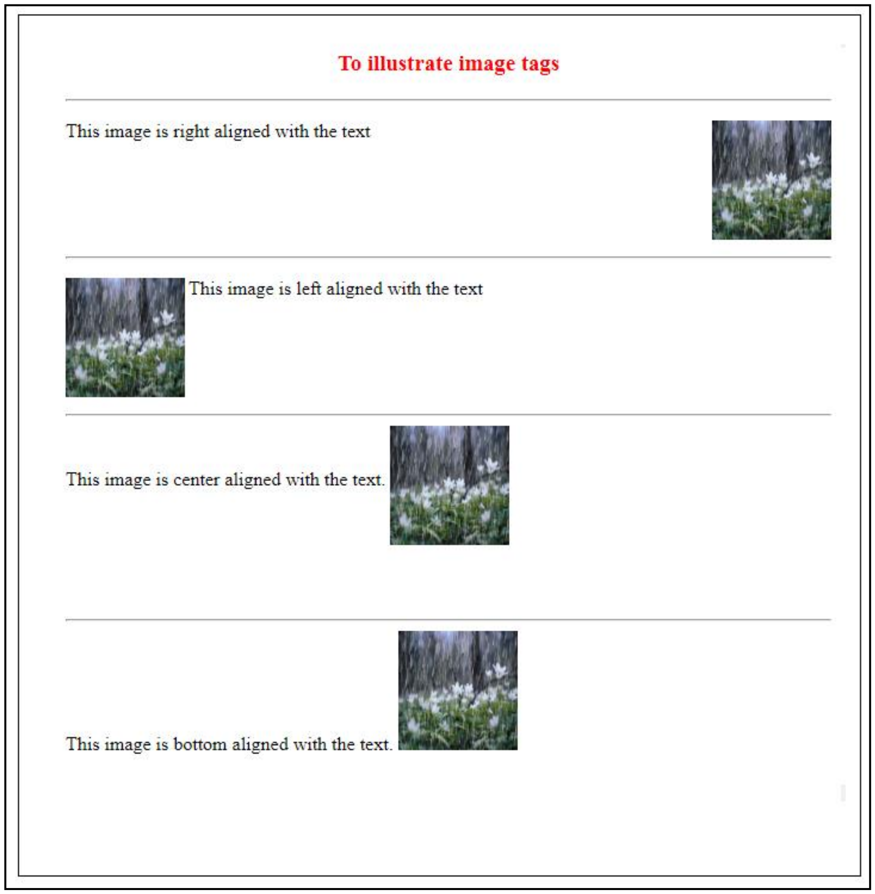
This image is top aligned with the text.

<img src="C:\Users\Public\Pictures\Sample Pictures\Sample pic.jpg"
align="top" height="100" width="100"/>

</body>

</html>
```

Output



5. Write the html code with image resizing property

Image size.html

```
<html>

<head>

</head>

<body>

  <h1>Placing Images in HTML Documents</h1>

<img src="C:\Users\Public\Pictures\Sample Pictures\Sample pic.jpg"
alt="Rain">

<img src="C:\Users\Public\Pictures\Sample Pictures\pic1.jpg"
alt="Happy">

<img src="C:\Users\Public\Pictures\Sample Pictures\pic2.jpg" alt="Happy
Group">
```

```
    <h1>Setting Image Width and Height Using style Attribute in HTML</h1>

    <img src="C:\Users\Public\Pictures\Sample Pictures\Sample pic.jpg" alt="Rain" style="width: 300px; height: 300px;">

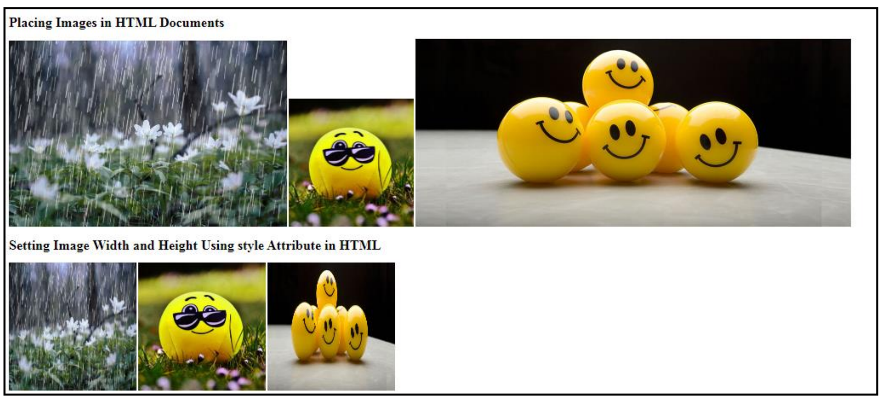
    <img src="C:\Users\Public\Pictures\Sample Pictures\pic1.jpg" alt="Happy" style="width: 300px; height: 300px;">

    <img src="C:\Users\Public\Pictures\Sample Pictures\pic2.jpg" alt="Happy Group" style="width: 300px; height: 300px;">

</body>

</html>
```

<u>Output</u>



6. Write the html code to display sample form

<u>Sample form.html</u>

```
<html>

<head><h2><center>Sample form</center></h2></title>

</head>

<body>

    <form>

        <fieldset>

            <legend>Name</legend>

            <label>Firstname: <input type="text" name="firstname"></label>
```

```
<label>Lastname: <input type="text"
name="lastname"></label></fieldset>

<fieldset> <legend>Gender</legend>

<label><input type="radio" name="gender" value="male"> Male</label>

<label><input type="radio" name="gender" value="female">
Female</label> </fieldset>

<fieldset> <legend>Hobbies</legend>

<label><input type="checkbox" name="hobbies" value="soccer">
Soccer</label>

<label><input type="checkbox" name="hobbies" value="cricket">
Cricket</label>

<label><input type="checkbox" name="hobbies" value="baseball">
Baseball</label> </fieldset>

<fieldset><legend>Contact Details</legend>

<label for="address">Address:</label>

<textarea rows="3" cols="30" name="address" id="address"></textarea>

 <label for="city">City:</label>

<select name="city" id="city">

<option value="sydney">Sydney</option>

<option value="melbourne">Melbourne</option>

<option value="cromwell">Cromwell</option> </select></br></br>

<label> Email Address: <input type="email" name="email"></label>

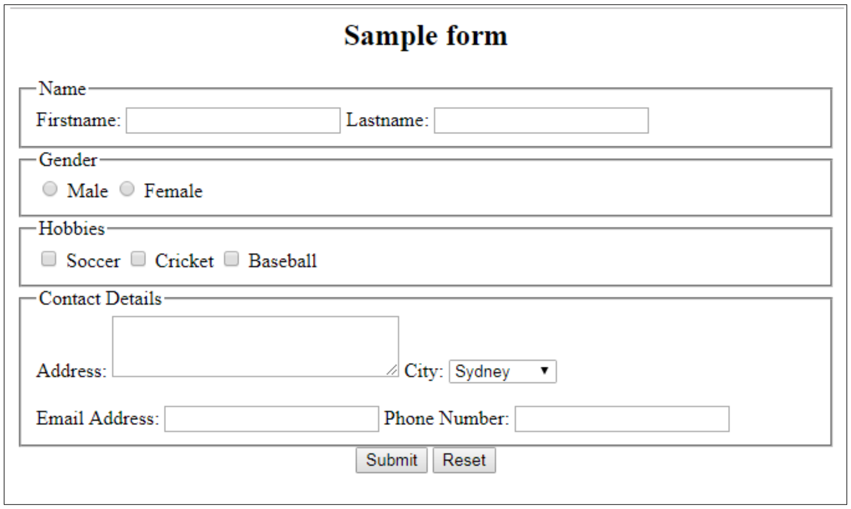
<label> Phone Number: <input type="text" name="phone"> </label>
</fieldset>

<center> <input type="submit" value="Submit">

<input type="reset" value="Reset"></center>

</form></body></html>
```

Output



7. Write the html code to display the internal style sheet using frame.

frame.html

```
<html>

<frameset rows="10%,90%">

<frame src="top.html" name="top">

<frameset cols="20%,80%">

<frame src="csstype.html" name="left">

<frame src="right.html" name="right">

</frameset>

</frameset>

</html>
```

Top.html

```
<html>

<head>

</head>

<body>

<h1 style="color:red" align =" center" color="Blue"> Three Types of
CSS</h1></body></html>
```

csstype.html

```
<html>

<head>

</head>

<body>

<p><a href=" External.html" target="right">External CSS</a></p>

<p><a href="Internal.html" target="right">Internal CSS</a></p>

<p><a href="Inline.html" target="right">Inline CSS</a></p>

</body>

</html>
```

Internal.html

```
<!DOCTYPE html>

<html>

<head><meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">

        <title>3 Column Layout</title>

        <style type="text/css">

                /* Layout */

                body {

                        min-width: 630px; }

                #container {

                        padding-left: 200px;

                        padding-right: 190px; }

                #container .column {

                        position: relative;

        float: left; }
```

```
#center {
        padding: 10px 20px;
        width: 100%;
    }
    #left {
        width: 180px;
        padding: 0 10px;
        right: 240px;
        margin-left: -100%;
    }
    #right {
        width: 130px;
        padding: 0 10px;
        margin-right: -100%;
    }
    #footer {
        clear: both;
    }
    /* IE hack */
    * html #left {
        left: 150px;
    }
    /* Make the columns the same height as each other */
    #container {
        overflow: hidden;
    }
```

```
#container .column {
        padding-bottom: 1001em;
        margin-bottom: -1000em;
    }
    /* Fix for the footer */
    * html body {
        overflow: hidden;
    }
    * html #footer-wrapper {
        float: left;
        position: relative;
        width: 100%;
        padding-bottom: 10010px;
        margin-bottom: -10000px;
        background: #fff;
    }
    /* Aesthetics */
    body {
        margin: 0;
        padding: 0;
        font-family:Sans-serif;
        line-height: 1.5em;
    }
    p {
        color: #555;
    }
```

```
nav ul {
        list-style-type: none;
        margin: 0;
        padding: 0;
    }
    nav ul a {
        color: darkgreen;
        text-decoration: none;
    }
    #header, #footer {
        font-size: large;
        padding: 0.3em;
        background: #BCCE98;
    }
    #left {
        background: #DAE9BC;
    }
    #right {
        background: #F7FDEB;
    }
    #center {
        background: #fff;
    }
    #container .column {
        padding-top: 1em;   }
</style>
</head>
```

```
<body>

        <header id="header" align="center"><p>HTML CSS
Example</p></header>

        <div id="container">

                <main id="center" class="column">

                        <article>

                                <h1>Heading</h1>

                        </article> </main>

                <nav id="left" class="column">

                        <h3>Left heading</h3>

                        <ul>

                                <li><a href="#">Extenal css</a></li>

                                <li><a href="#">Link 2</a></li>

                                <li><a href="#">Link 3</a></li>

                                <li><a href="#">Link 4</a></li>

                                <li><a href="#">Link 5</a></li>

                        </ul>           </nav>

                <div id="right" class="column">

                        <h3>Right heading</h3>

                <p><script>generateText(1)</script></p>

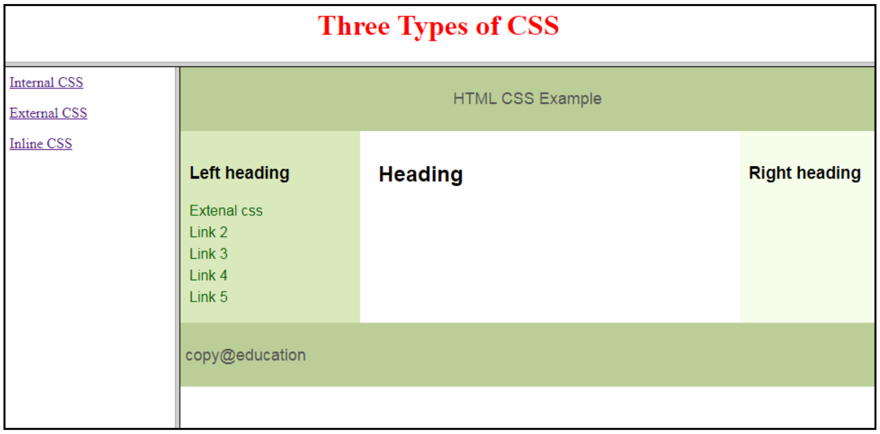
                </div> </div>

        <div id="footer-wrapper">

                <footer id="footer"><p>copy@education</p></footer>

        </div> </body> </html>
```

Output



8. Write the html code to display the external style sheet using frame.

External.html

```
<html>

<head>

<link rel="stylesheet" type="text/css" href="ext.css">

<style>   </style>  </head>

<body>

<h2>Internal, External & Inline Style!</h1>

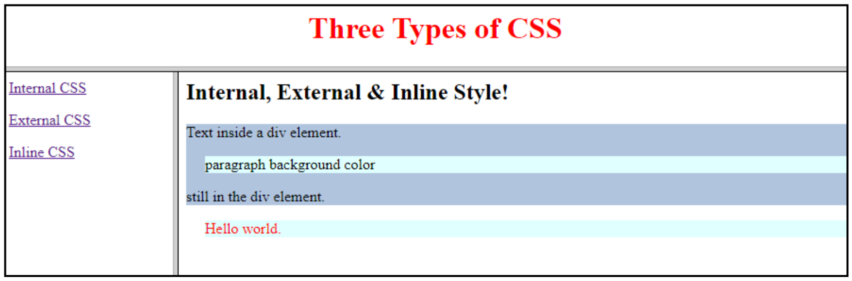
<div>Text inside a div element.

<p>paragraph background color</p>
still in the div element. </div>
<p style="color:red;margin-left:20px;">Hello world.</p>
</body> </html>
```

ext.css

```
h1      {       background-color:#6495ed;       }
P       {       background-color:#e0ffff;       }
div     {       background-color:#b0c4de;       }
hr      {       color:sienna;                   }
p       {       margin-left:20px;               }
body    {       background-image:url("sheet.jpg");
}
```

Output



9. Write the html code to display the inline style sheet using frame.

Inline.html

<html>

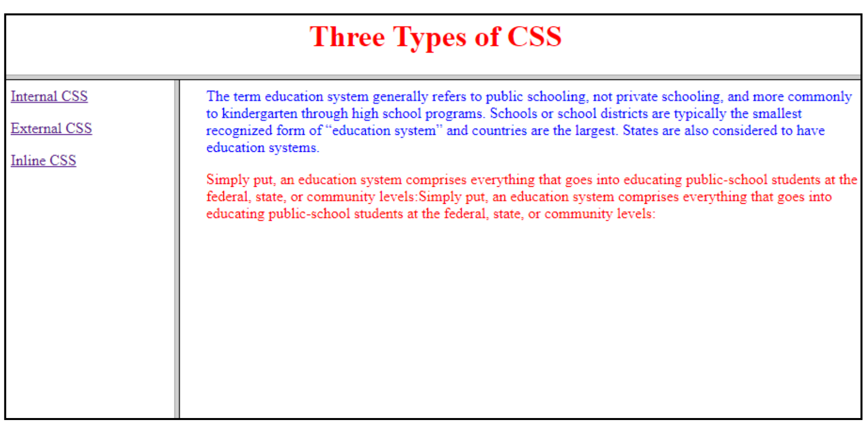
<head>

<p style="color:blue;margin-left:20px;">The term education system generally refers to public schooling, not private schooling, and more commonly to kindergarten through high school programs. Schools or school districts are typically the smallest recognized form of "education system" and countries are the largest. States are also considered to have education systems.</p>

<p style="color:Red;margin-left:20px;">

Simply put, an education system comprises everything that goes into educating public-school students at the federal, state, or community levels:Simply put, an education system comprises everything that goes into educating public-school students at the federal, state, or community levels:</p> </body> </html>

Output



10. Write the html code with javascript code to validate the user input form

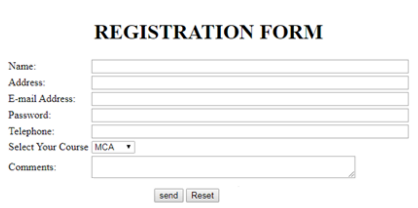
<u>Form validation.html</u>

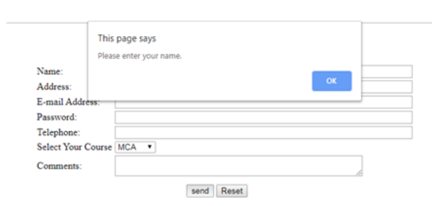
```
<html>
<head>
<script>
function validate()
{
        var name = document.forms["RegForm"]["Name"];
        var email = document.forms["RegForm"]["EMail"];
        var phone = document.forms["RegForm"]["Telephone"];
        var what = document.forms["RegForm"]["Subject"];
        var password = document.forms["RegForm"]["Password"];
        var address = document.forms["RegForm"]["Address"];
        if (name.value == "")
        {
                window.alert("Please enter your name.");
                name.focus();
return false;
        }
if (address.value == "")
        {
window.alert("Please enter your address.");
name.focus();
return false;
        }
if (email.value == "")
{
window.alert("Please enter a valid e-mail address.");
email.focus();
return false;
        }
```

```
if (email.value.indexOf("@", 0) < 0)                    {
window.alert("Please enter a valid e-mail address.");
email.focus();
return false;
}
if (email.value.indexOf(".", 0) < 0)
{
window.alert("Please enter a valid e-mail address.");
email.focus();
return false;
        }
if (phone.value == "")
        {
window.alert("Please enter your telephone number.");
phone.focus();
return false;
        }
if (password.value == "")
        {
window.alert("Please enter your password");
password.focus();
return false;
        }
if (what.selectedIndex < 1)
        {
alert("Please enter your course.");
what.focus();
return false;
        }
return true;
        }
</script>
</head>
```

```
<body>
<h1 style="text-align: center"> REGISTRATION FORM </h1>
<table align="center">
<form name="RegForm" action="/submit.php" onsubmit="return
validate()" method="post">
<tr><td>Name:</td><td> <input type="text" size=65 name="Name">
</td> </tr>
<tr><td> Address:</td><td> <input type="text" size=65
name="Address"></td>  </tr>
<tr><td>E-mail Address:</td><td>  <input type="text" size=65
name="EMail"> </td>  </tr>
<tr><td>Password: </td><td> <input type="text" size=65
name="Password"> </td>  </tr>
<tr><td>Telephone: </td><td> <input type="text" size=65
name="Telephone"> </td>  </tr>
<p> <td>Select Your Course</td><td>
<select type="text" value="" name="Subject">
                    <option>MCA</option>
                    <option>M.Sc</option>
                    <option>MBA</option>
                    <option>M.Tech</option>
</select> </td> </tr>
<tr><td>Comments: </td><td> <textarea cols="55" name="Comment">
</textarea></td> </tr>
<tr><td><input type="submit" value="send" name="Submit">
<input type="reset" value="Reset" name="Reset"> </td> </tr>    </form>
</body> </html>
```

<u>Output</u>





11. Write the html code with javascript to print the string for the number input

Number to string.html

```
<html>

<head><h2> Number to String</h2>

<meta http-equiv="Content-Type" content="text/html;charset=utf-8"/>

<script type="text/javascript">

function update(){

    var bigNumArry = new Array('', ' thousand', ' million', ' billion', '
trillion', ' quadrillion', ' quintillion');

 var output = '';

 var numString =   document.getElementById('number').value;

    var finlOutPut = new Array();

    if (numString == '0') {

document.getElementById('container').innerHTML = 'Zero';

        return; }

    if (numString == 0) {

document.getElementById('container').innerHTML = 'messeg tell to enter
numbers';

        return;   }

    var i = numString.length;

    i = i - 1;

    //cut the number to grups of three digits and add them to the Arry

while (numString.length > 3) {

var triDig = new Array(3);

triDig[2] = numString.charAt(numString.length - 1);

triDig[1] = numString.charAt(numString.length - 2);

triDig[0] = numString.charAt(numString.length - 3);
```

```
var varToAdd = triDig[0] + triDig[1] + triDig[2];
finlOutPut.push(varToAdd);
        i--;
numString = numString.substring(0, numString.length - 3);
}
finlOutPut.push(numString);
finlOutPut.reverse();
    //conver each grup of three digits to english word
    //if all digits are zero the triConvert
    //function return the string "dontAddBigSufix"
    for (j = 0; j < finlOutPut.length; j++) {
        finlOutPut[j] = triConvert(parseInt(finlOutPut[j]));
    }
    var bigScalCntr = 0; //this int mark the million billion trillion... Arry
    for (b = finlOutPut.length - 1; b >= 0; b--) {
if (finlOutPut[b] != "dontAddBigSufix") {
  finlOutPut[b] = finlOutPut[b] + bigNumArry[bigScalCntr] + ' , ';
            bigScalCntr++;
        }
        else
{
//replace the string at finlOP[b] from "dontAddBigSufix" to empty String.
            finlOutPut[b] = ' ';
            bigScalCntr++; //advance the counter
        }
    }
```

```
 //convert The output Arry to , more printable string

        for(n = 0; n<finlOutPut.length; n++){

            output +=finlOutPut[n];

        }

    document.getElementById('container').innerHTML = output;//print the
output

}

//simple function to convert from numbers to words from 1 to 999

function triConvert(num){

    var ones = new Array('', ' one', ' two', ' three', ' four', ' five', ' six', ' seven',
' eight', ' nine', ' ten', ' eleven', ' twelve', ' thirteen', ' fourteen', ' fifteen', '
sixteen', ' seventeen', ' eighteen', ' nineteen');

    var tens = new Array('', '', ' twenty', ' thirty', ' forty', ' fifty', ' sixty', '
seventy', ' eighty', ' ninety');

    var hundred = ' hundred';

    var output = '';

    var numString = num.toString();


    if (num == 0) {

        return 'dontAddBigSufix';

    }

//the case of 10, 11, 12 ,13, .... 19

    if (num < 20) {

        output = ones[num];

        return output;

    }
```

```
    //100 and more
    if (numString.length == 3) {
        output = ones[parseInt(numString.charAt(0))] + hundred;
        output += tens[parseInt(numString.charAt(1))];
        output += ones[parseInt(numString.charAt(2))];
        return output;
    }
    output += tens[parseInt(numString.charAt(0))];
    output += ones[parseInt(numString.charAt(1))];

    return output;
}
</script>
</head>
<body>

<input type="text"
    id="number"
    size="70"
    onkeyup="update();"
```

```
   /*this code prevent non numeric letters*/

   onkeydown="return (event.ctrlKey || event.altKey

                 || (47<event.keyCode && event.keyCode<58 &&
event.shiftKey==false)

                 || (95<event.keyCode && event.keyCode<106)

                 || (event.keyCode==8) || (event.keyCode==9)

                 || (event.keyCode>34 && event.keyCode<40)

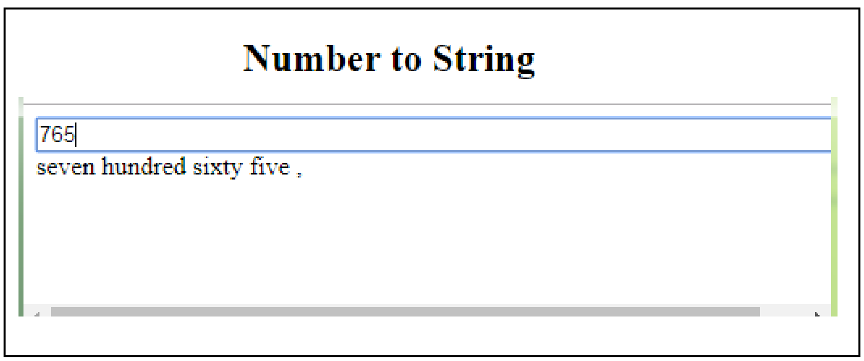
                 || (event.keyCode==46) )"/>

                 <br/>

<div id="container">Here The Numbers Printed</div>

</body> </html>
```

Output



12. **Write the html code with javascript to display a dynamic html page.**

Clock.html

```
<!DOCTYPE html>

<html>

<body>

<canvas id="canvas" width="400" height="400"

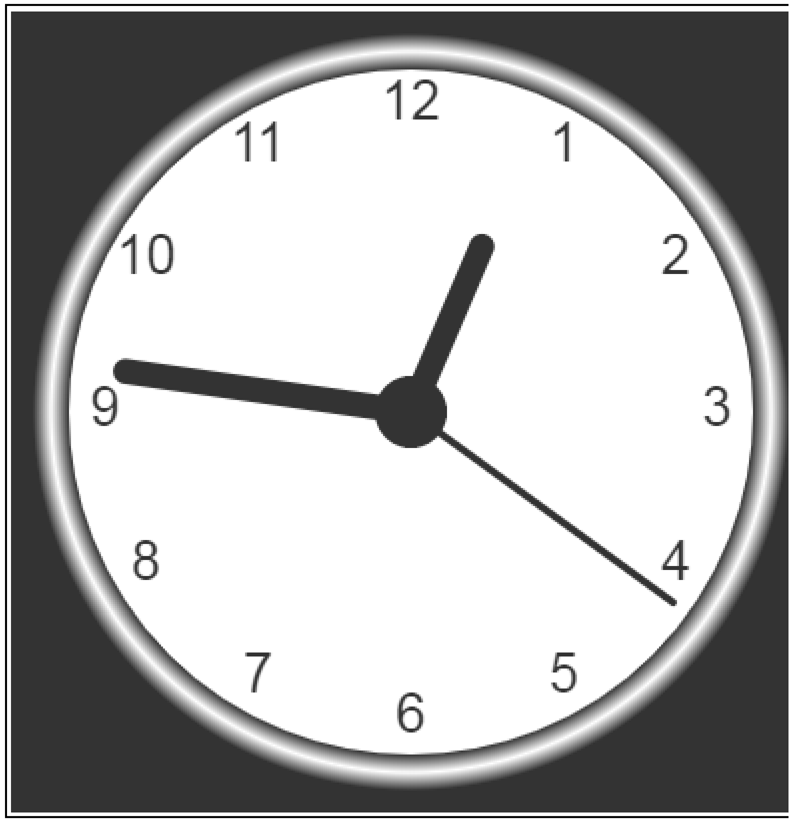
style="background-color:#333">
```

```
</canvas>
<script>
var canvas = document.getElementById("canvas");
var ctx = canvas.getContext("2d");
var radius = canvas.height / 2;
ctx.translate(radius, radius);
radius = radius * 0.90
setInterval(drawClock, 1000);
function drawClock() {
  drawFace(ctx, radius);
  drawNumbers(ctx, radius);
  drawTime(ctx, radius);
}
function drawFace(ctx, radius) {
  var grad;
  ctx.beginPath();
  ctx.arc(0, 0, radius, 0, 2*Math.PI);
  ctx.fillStyle = 'white';
  ctx.fill();
  grad = ctx.createRadialGradient(0,0,radius*0.95, 0,0,radius*1.05);
  grad.addColorStop(0, '#333');
  grad.addColorStop(0.5, 'white');
  grad.addColorStop(1, '#333');
  ctx.strokeStyle = grad;
  ctx.lineWidth = radius*0.1;
```

```
  ctx.stroke();
  ctx.beginPath();
  ctx.arc(0, 0, radius*0.1, 0, 2*Math.PI);
  ctx.fillStyle = '#333';
  ctx.fill();
}
function drawNumbers(ctx, radius) {
  var ang;
  var num;
  ctx.font = radius*0.15 + "px arial";
  ctx.textBaseline="middle";
  ctx.textAlign="center";
  for(num = 1; num < 13; num++){
    ang = num * Math.PI / 6;
    ctx.rotate(ang);
    ctx.translate(0, -radius*0.85);
    ctx.rotate(-ang);
    ctx.fillText(num.toString(), 0, 0);
    ctx.rotate(ang);
    ctx.translate(0, radius*0.85);
    ctx.rotate(-ang);
  }   }
function drawTime(ctx, radius){
    var now = new Date();
    var hour = now.getHours();
    var minute = now.getMinutes();
    var second = now.getSeconds();
```

```
  //hour
    hour=hour%12;
    hour=(hour*Math.PI/6)+
    (minute*Math.PI/(6*60))+
    (second*Math.PI/(360*60));
    drawHand(ctx, hour, radius*0.5, radius*0.07);
    //minute
minute=(minute*Math.PI/30)+(second*Math.PI/(30*60));
    drawHand(ctx, minute, radius*0.8, radius*0.07);
    // second
    second=(second*Math.PI/30);
    drawHand(ctx, second, radius*0.9, radius*0.02);
}
function drawHand(ctx, pos, length, width) {
    ctx.beginPath();
    ctx.lineWidth = width;
    ctx.lineCap = "round";
    ctx.moveTo(0,0);
  ctx.rotate(pos);
    ctx.lineTo(0, -length);
    ctx.stroke();
    ctx.rotate(-pos);
}
</script>
</body>
</html>
```

Output



13. Write a DHTML code with Javascript to define a user defined function for sorting the values in an array.

Array.html

```
<html>

<head>

<script type="text/javascript">

var num=0;

number=0;

var numarray=new Array();

function array_size()

{
```

```
num=prompt("Enter how many number to be sorted","000");
number=parseInt(num);
get_numbers();
}
function get_numbers()
{
if (number!=null && number!="")
{
for( i=0;i<number;i++)
{
n=prompt("Enter the number to be sorted","1");
numarray[i]=parseInt(n);
}
}
sorting()
}
function sorting()
{
document.writeln("<h1>Sorted Array<h1>");
document.writeln(numarray.sort(sortNumber));
}
function sortNumber(a,b )
{
return a - b;
}
</script>    </head>
```

```
<body>

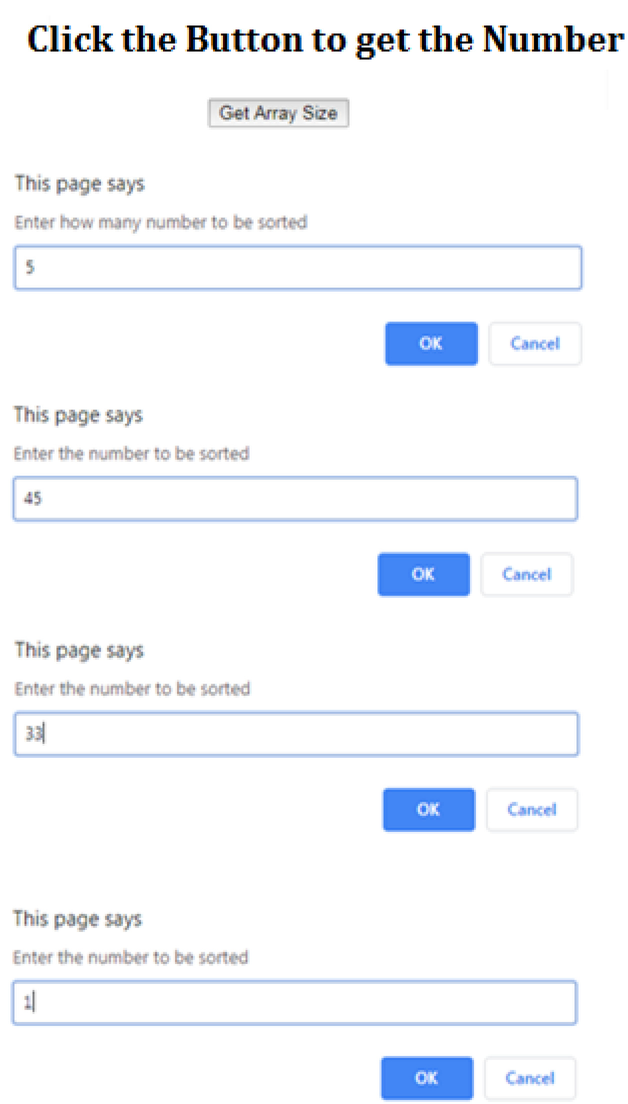
<h1> Click the button to get the Number sorted</h1>

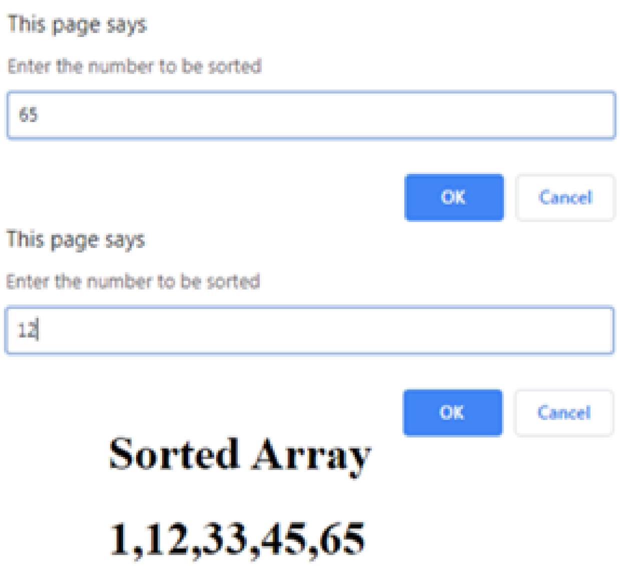
<input type="button" onclick="array_size()" value="Get Array Size" />

</body>

</html>
```

Output





14. Write a DHTML code with Javascript to display the calendar

<u>Calendar.html</u>

```
<html>

<head>

<script language="javascript">

function day_title(day_name)

{

document.write("<td align=center width=35>"+day_name+"</td>")

}

function fill_table(month,month_len)

{

day=1

document.write("<table border=1 cellspacing=3 cellpadding=3%>")

document.write("<td colspan=7 align=center><b>"+month+" "+year
```

```
+"</b><tr>")

day_title("Sun")

day_title("Mon")

day_title("Tue")

day_title("Wed")

day_title("Thu")

day_title("Fri")

day_title("Sat")

document.write("</tr><tr>");

for(var i=1; i<start_day;i++)

{

document.write("<td>")

}

for(var i=start_day; i<8;i++)

{

document.write("<td align=center>"+"<a href=DAILYFORM.html>"+day
+"</a>"+"</td>")

day++

}

document.write("<tr>")

while(day<=month_len)

{

for(var i=1; i<=7 && day<=month_len;i++)

{

document.write("<td align=center>"+"<a href=index.html>"+day
```

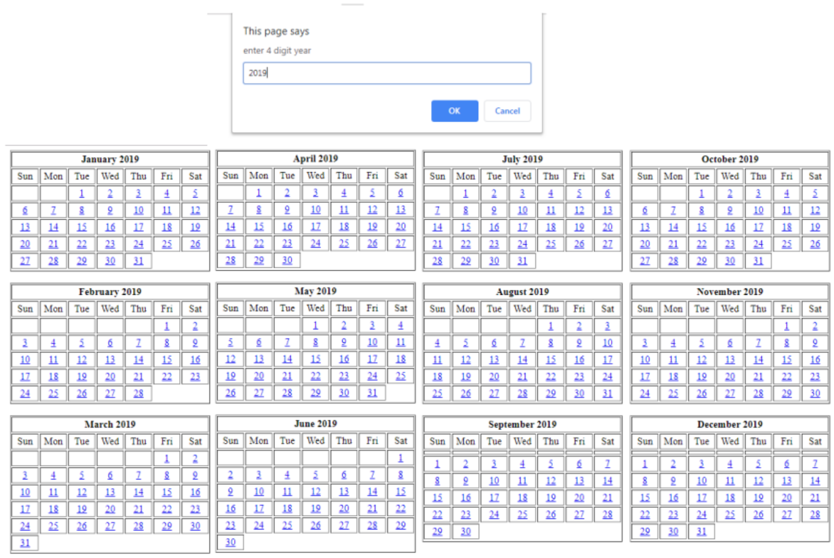
```
+"</a>"+"</td>")
day++
}
document.write("<tr>")
start_day=i;
}
document.write("</tr></table><br>")
}
year=prompt("enter 4 digit year ");
today=new Date("January 1, "+year)
start_day=today.getDay()+1
fill_table("January", 31)
if (year%4==0)
fill_table("February", 29)
else
fill_table("February", 28)
fill_table("March", 31)
fill_table("April", 30)
fill_table("May", 31)
fill_table("June", 30)
fill_table("July", 31)
fill_table("August", 31)
fill_table("September", 30)
fill_table("October", 31)
fill_table("November", 30)
fill_table("December", 31)
```

```
</script>

</head>

</html>
```

<u>Output:</u>



15. Write an XML file which will display the Book information which includes the following:

1) Title of the book 2) Author Name 3) ISBN number 4) Publisher name 5) Edition 6) Price Write a Document Type Definition (DTD) to validate the above XML file.

Books.DTD

```
<!ELEMENT details (title, author, ISBN_Number, publisher, edition, price) >

<!ELEMENT title (#PCDATA)>

<!ELEMENT author (#PCDATA)>

<!ELEMENT ISBN_Number (#PCDATA)>

<!ELEMENT publisher (#PCDATA)>

<!ELEMENT edition (#PCDATA)>

<!ELEMENT price (#PCDATA)>
```

Style.css

```
.thb
{
background-color:gray;
}
.bg
{
background-color:red;
}
```

Books.xml

```
<?xml version="1.0"?>
<!DOCTYPE book SYSTEM
"books.dtd"> <book>
<details>
<title> C</title>
<author> BalaGuru Swami</author>
<ISBN_Number>2536</ISBN_Number>
<publisher>pearson</publisher>
<edition>2</edition> <price>255/-
</price>
</details>
<details>
<title> C++</title>
<author> BalaGuru Swami</author>
<ISBN_Number>5236</ISBN_Number>
<publisher>pearson</publisher>
<edition>2</edition> <price>315/-
</price>
```

```
</details>

<details>

</details>

<details>

<title> E-Commerce</title>

<author> Kalakata</author>

<ISBN_Number>8562</ISBN_Number>

<publisher>pearson</publisher>

<edition>5</edition>

<price>300/-</price>

</details>

<details>

<title> CO</title>

<author> Marris </author>

<ISBN_Number>4578</ISBN_Number>

<publisher>Dream Tech</publisher>

<edition>5</edition>

<price>270/-</price>

</details>

<details>

<title> Web Technologies</title>

<author> Kumar </author>

<ISBN_Number>5423</ISBN_Number>

<publisher>Willay</publisher>

<edition>6</edition>

<price>500/-</price>
```

```
</details>
<details>
<title> Web Programming</title>
<author> Kumar </author>
<ISBN_Number>1258</ISBN_Number>
<publisher>Willay</publisher>
<edition>6</edition>
<price>500/-</price>
</details>
</book>
```

Book.html

```
<html>
<head>
<link rel="stylesheet" type="text/css" href="Style.css">
</head>
<body>
<script type="text/javascript">
if (window.XMLHttpRequest)
{// code for IE7+, Firefox, Chrome, Opera,
Safari xmlhttp=new XMLHttpRequest();
}
else
{// code for IE6, IE5
xmlhttp=new ActiveXObject("Microsoft.XMLHTTP");
}
xmlhttp.open("GET","books.xml",false);
```

```
xmlhttp.send();

xmlDoc=xmlhttp.responseXML;

document.write("<table border='1'>");

var x=xmlDoc.getElementsByTagName("details")

document.write("<tr><th class='thb'>");

document.write("TITLE</th><th class='thb'>AUTHOR</th><th

class='thb'>ISBN_Number</th><th class='thb'>PUBLISHER</th><th

class='thb'>EDITION</th><th class='thb'>PRICE</th></tr>");

for (i=0;i<x.length;i++)

{

document.write("<tr><td>");

document.write(x[i].getElementsByTagName("title")[0].childNodes
  [0].nodeValue);

document.write("</td><th class='bg'>");document.write(x
[i].getElementsByTagName("author")[0].childNodes[0].nodeValue.toUpp
erCase());

document.write("</th><td>");

document.write(x[i].getElementsByTagName("ISBN_Number")
[0].childNodes[0].nodeValue);

document.write("</td><td>");

[0].childNodes[0].nodeValue);

document.write("</td><td>");

[0].childNodes[0].nodeValue);

document.write("</td><td>");

document.write(x[i].getElementsByTagName("publisher")[0].childNodes

[0].nodeValue);

document.write("</td><td>");

document.write(x[i].getElementsByTagName("edition")[0].childNodes
[0].nodeValue);
```

```
document.write("</td><td>");

document.write(x[i].getElementsByTagName("edition")[0].childNodes
[0].nodeValue);

document.write("</td><td>");

document.write(x[i].getElementsByTagName("price")[0].childNodes
[0].nodeValue);

document.write("</td></tr>");

}

document.write("</table>");

</script>

</body>

</html>
```

Output

TITLE	AUTHOR	ISBN_Number	PUBLISHER	EDITION	PRICE
C	BALAGURU SWAMI	2536	pearson	2	255/-
C++	BALAGURU SWAMI	5236	pearson	2	315/-
E-Commerce	KALAKATA	8562	pearson	5	300/-
CO	MARRIS	4578	Dream Tech	5	270/-
Web Technologies	KUMAR	5423	Willay	6	500/-
Web Programming	KUMAR	1258	Willay	6	500/-

16. Write a program to display the student name using simple beans

Student.java

```
public class Student implements java.io.Serializable

{

private int id;

private String name;

public Student()

        {
}
```

```
public void setId(int id)
        {       this.id = id;
        }
public int getId()
        {
                return id;
        }
public void setName(String name)
        {
                this.name = name;
        }
public String getName()
        {
                return name;
        }
}
```

Test.java

```
public class Test {
public static void main(String args[])
        {
                Student s = new Student(); // object is created
                s.setName("GFG"); // setting value to the object
                System.out.println(s.getName());
        }
}
```

Output:

Alagappa University

17. Write a Javabean program in Web Application

<u>beanExample.jsp</u>

```
<%@ page language='java' contentType='text/html; charset=UTF-8'

pageEncoding='UTF-8'%>

<!DOCTYPE html PUBLIC '-//W3C//DTD HTML 4.01 Transitional//EN'
'http://www.w3.org/TR/html4/loose.dtd'>

<html>

<head>

<meta http-equiv='Content-Type' content='text/html; charset=UTF-8'>

<title>Use Bean Example</title>

</head>

<body>

<jsp:useBean id='date'  class='java.util.Date'/>

<jsp:useBean id='person'  class='javabeat.net.jsp.beans.Person'>

<jsp:setProperty name='person' property='firstName'

value='joe'/>

<jsp:setProperty name='person' property='lastName'

value='smith'/>

<jsp:setProperty name='person' property='age'

value='10'/>

</jsp:useBean>

<h2>Simple use of bean calling java.util.Date</h2>

Today is <%=date%>

<h2>Example for Accessing JavaBeans Properties</h2>

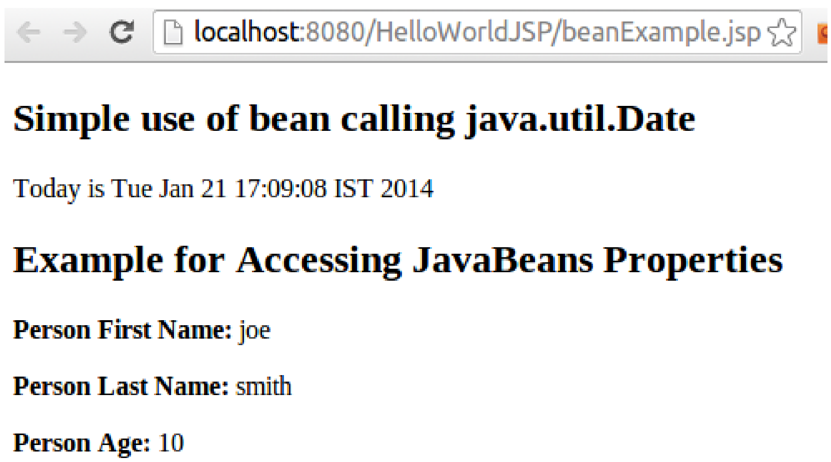
<p><b>Person First Name:</b>

<jsp:getProperty name='person' property='firstName'/>

</p>
```

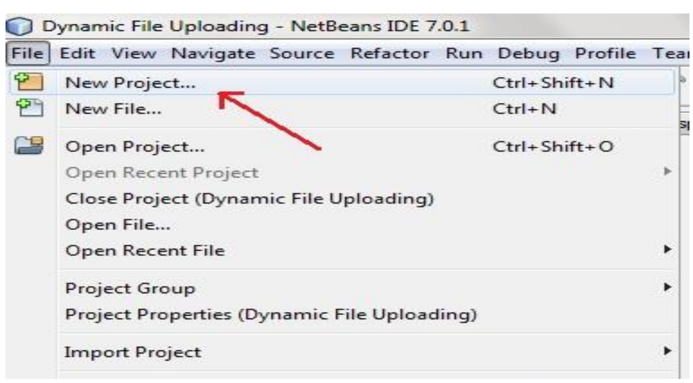
```
<p><b>Person Last Name:</b>
<jsp:getProperty name='person' property='lastName'/>
</p>
<p><b>Person Age:</b>
<jsp:getProperty name='person' property='age'/>
</p>
</body>
</html>
```

Output

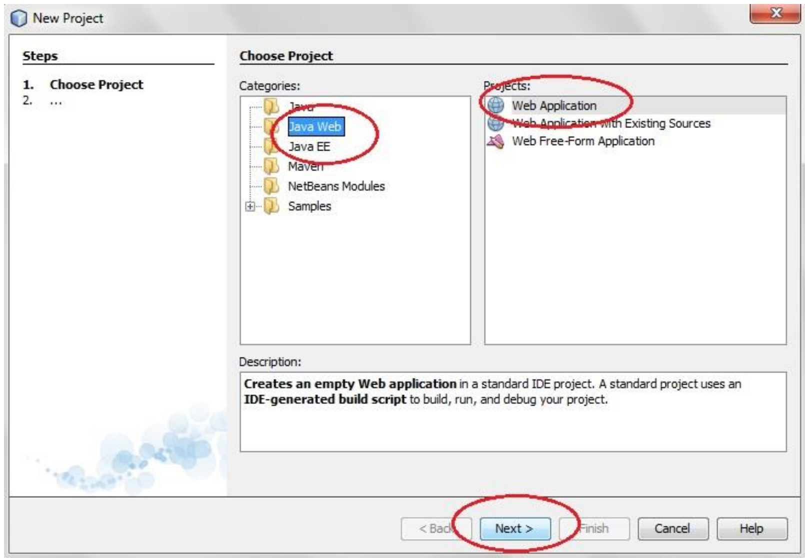


18.Simple Servlet program(With Execution procedure)

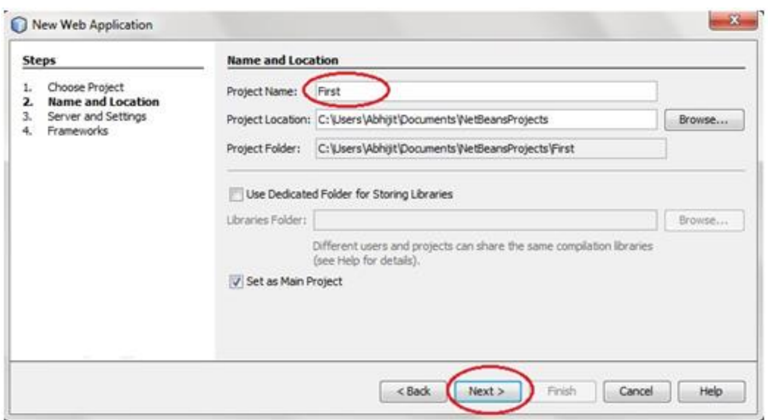
1. To create a servlet application in Netbeans IDE, you will need to follow the following steps
2. Open Netbeans IDE, Select **File** -> **New Project**



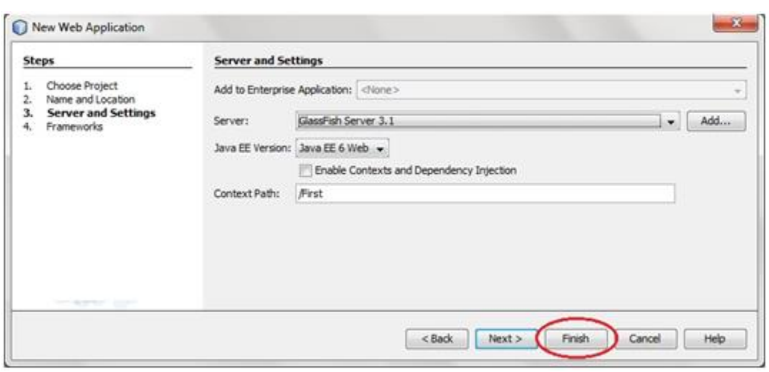
3. Select **Java Web** -> **Web Application**, then click on Next,



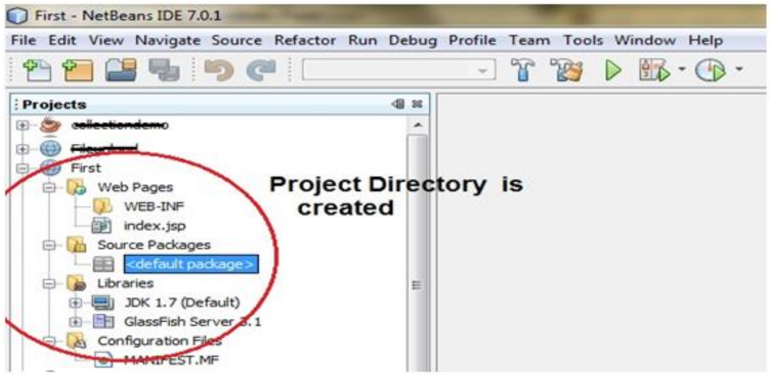
4. Give a name to your project and click on Next,



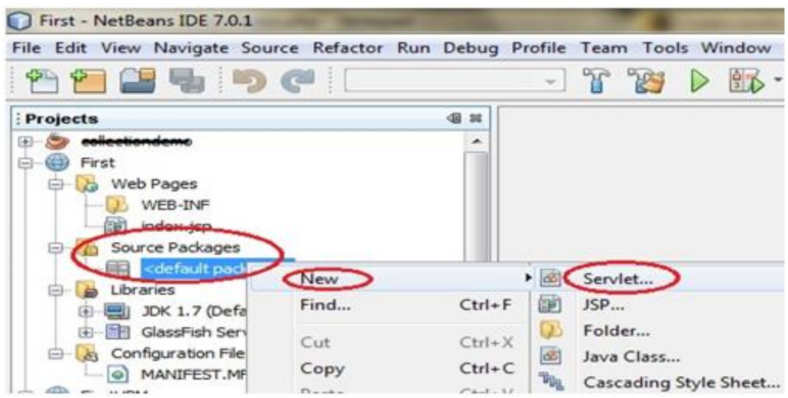
5. Click **Finish**



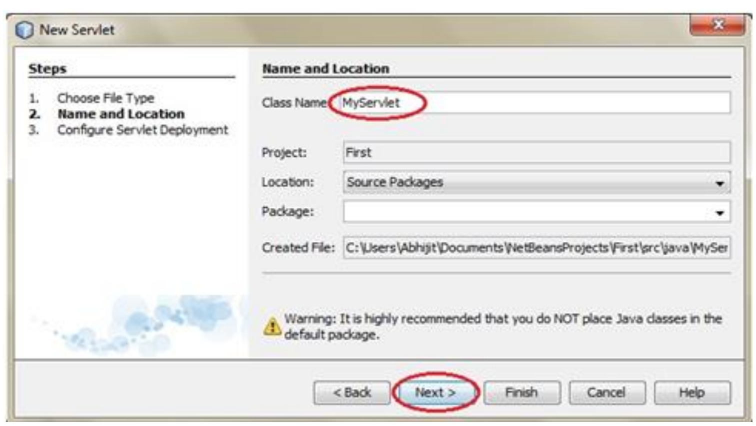
6. The complete directory structure required for the Servlet Application will be created automatically by the IDE.

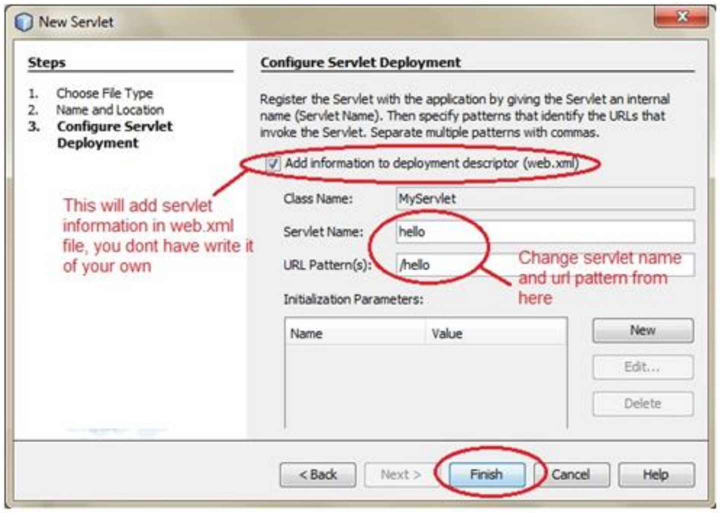


7. To create a Servlet, open **Source Package**, right click on **default packages -> New -> Servlet**.

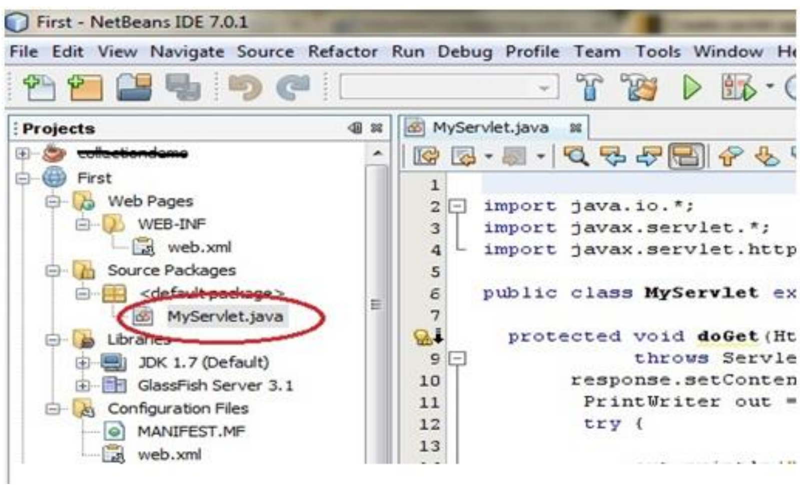


8. Give a Name to your Servlet class file,

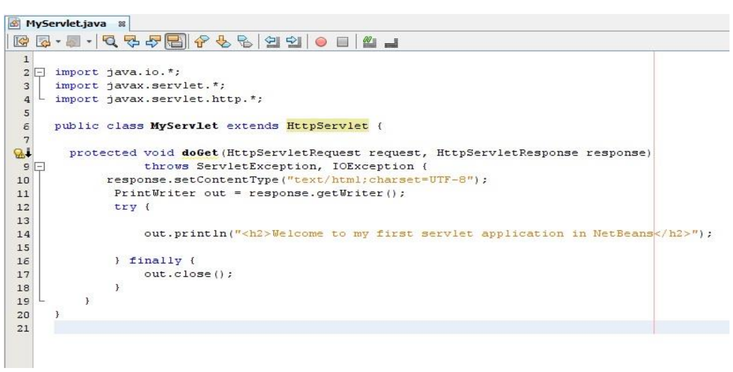




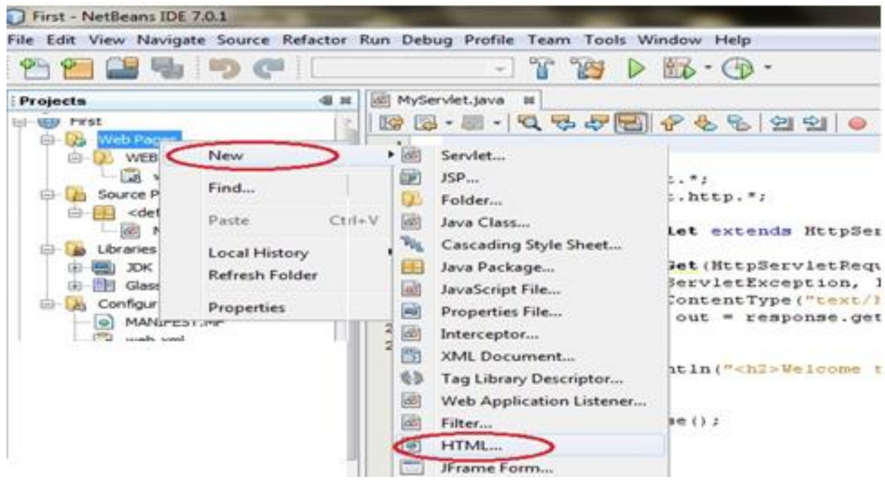
Now, your Servlet class is ready, and you just need to change the method definitions and you will good to go.



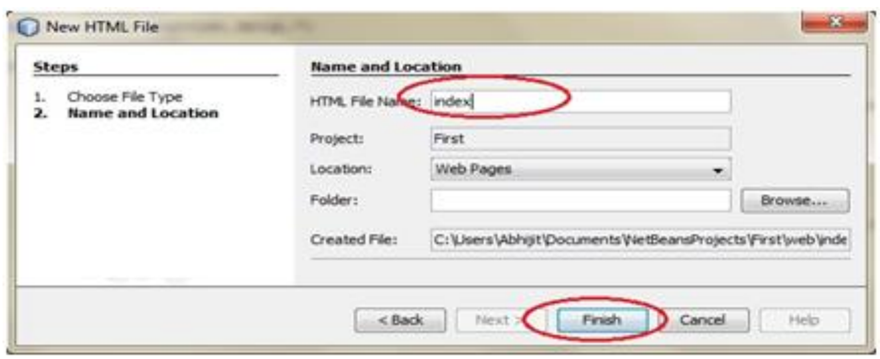
Write some code inside your Servlet class.



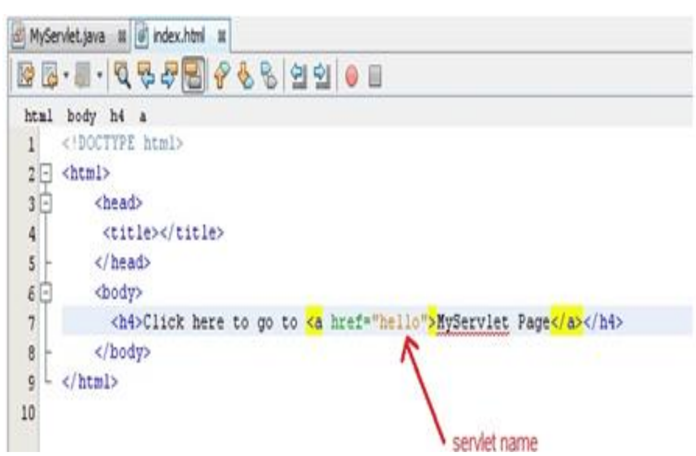
9. Create an HTML file, right click on **Web Pages** -> **New** -> **HTML**



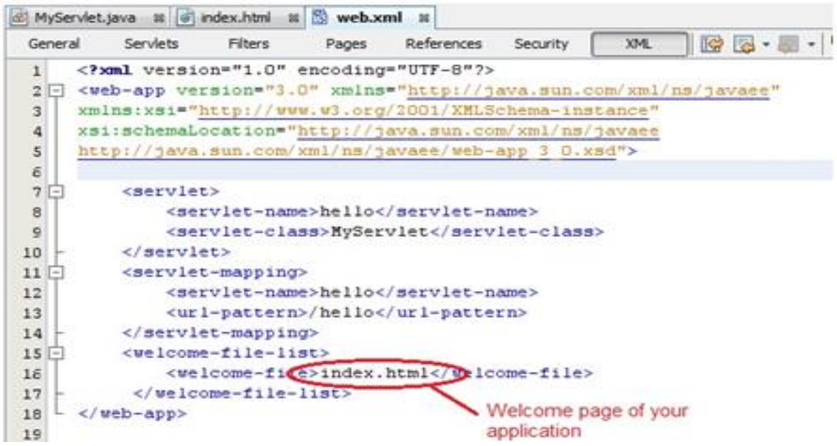
10. Give it a name. We recommend you to name it **<u>index</u>**, because browser will always pick up the **<u>index.html</u>** file automatically from a directory. Index file is read as the first page of the web application.



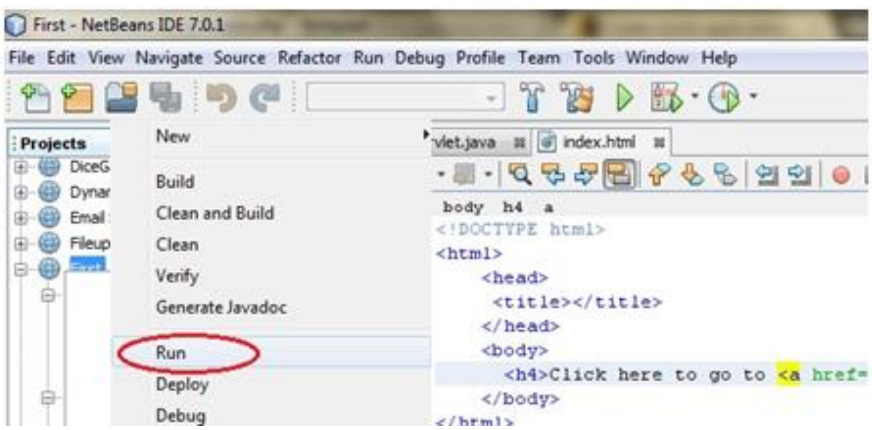
11.Write some code inside your HTML file. We have created a hyperlink to our Servlet in our HTML file.



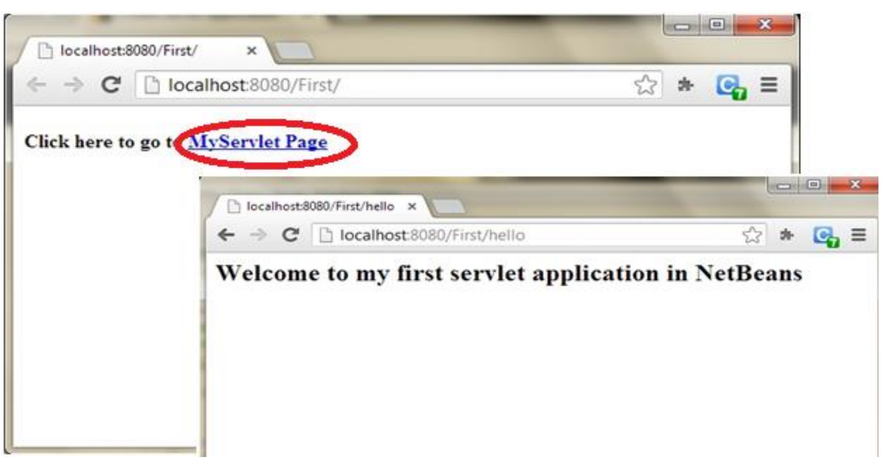
12. Edit **web.xml** file. In the web.xml file you can see, we have specified the **url-pattern** and the **servlet-name**, this means when hello url is accessed our Servlet file will be executed



13. Run your application, right click on your Project and select **Run**



Click on the link created, to open your Servlet. Now, Servlet class is running.



<u>18.1.</u> . Simple program for servlet

<u>index.html</u>

```
<!DOCTYPE html>

<html>

<head>

<meta charset="UTF-8">

<title>Insert title here</title>

</head>

<body>


  Welcome to servlet 3 Form example

<br>

<br>

<form action="MyForm">

     Email : <input type="text" name="email"> <br>

     User Name: <input type="text" name="uname"> <br>

     Password: <input type="password" name="pass"> <br>

     Gender : <input type="radio" name="gender" value="male" checked>

     Male <input type="radio" name="gender" value="female">

     Female <input type="radio" name="gender" value="other"> <br>

     Course: <input type="checkbox" name="course" value="Java">

     Java <input type="checkbox" name="course" value="Dot Net">

     DotNet <input type="checkbox" name="course" value="PHP"> PHP
<br>

<input type="submit" value="Submit"><input type="reset">

</form></body>

</html>
```

FormController.java

```
import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/MyForm")

public class FormController extends HttpServlet

{

  protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException

  {

String em = request.getParameter("email");

    String un = request.getParameter("uname");

    String pa = request.getParameter("pass");

    String ge = request.getParameter("gender");

    String[] co = request.getParameterValues("course");

    response.setContentType("text/html");

    PrintWriter pw=response.getWriter();

pw.write("<h2> Following data received sucessfully.. <h2> <br>");

    pw.write("<h3> Email: "+ em +" </h3>");

    pw.write("<h3> User name: "+ un +" </h3>");

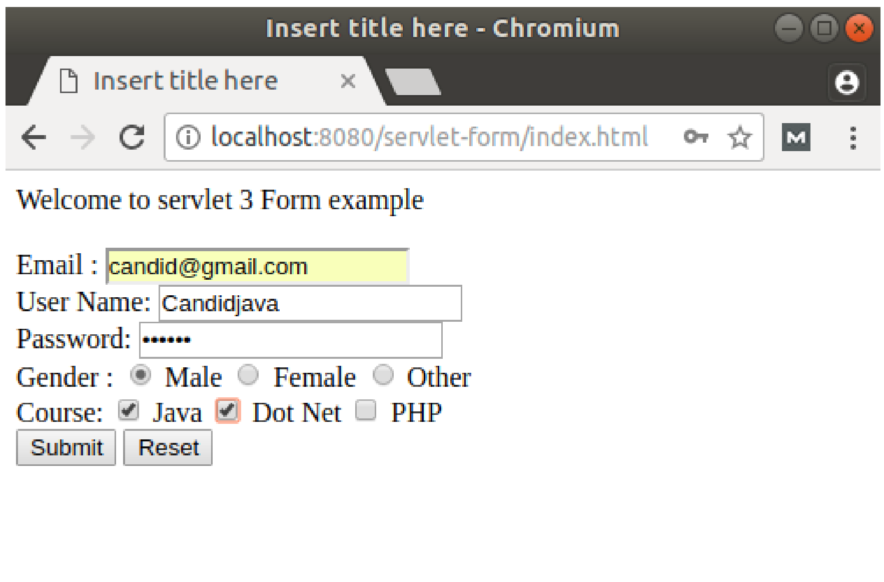
    pw.write("<h3> Password: "+ pa +" </h3>");

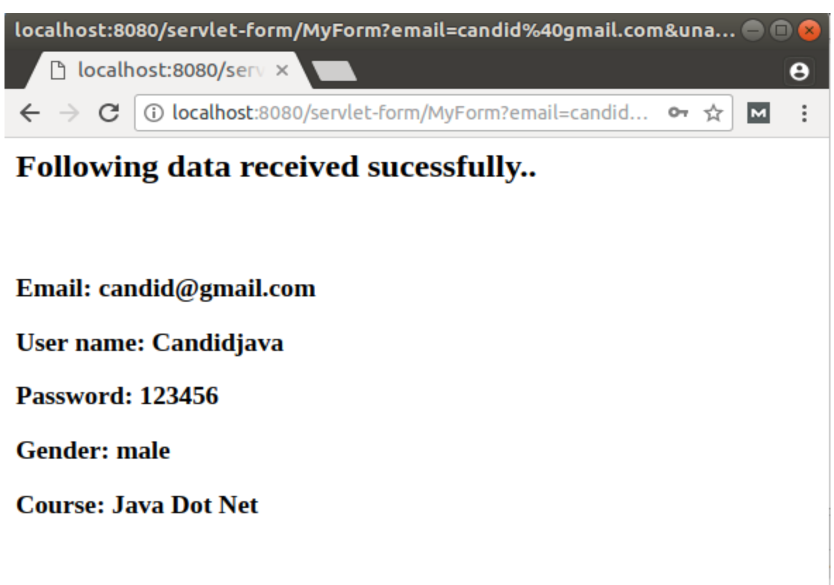
    pw.write("<h3> Gender: "+ ge +" </h3>");

    pw.write("<h3> Course:  ");
```

```
for(String c:co)
    {
      pw.write(  c+"   ");
    }
    pw.write("</h3>");
  }
}
```

Output





19. Write servlet program to send email Message

EmailUtility.java

```
package net.codejava.email;
import java.util.Date;
import java.util.Properties;
import javax.mail.Authenticator;
import javax.mail.Message;
import javax.mail.MessagingException;
import javax.mail.PasswordAuthentication;
import javax.mail.Session;
import javax.mail.Transport;
import javax.mail.internet.AddressException;
import javax.mail.internet.InternetAddress;
import javax.mail.internet.MimeMessage;
public class EmailUtility {
public static void sendEmail(String host, String port,
final String userName, final String password, String toAddress,
String subject, String message) throws AddressException,
MessagingException {
// sets SMTP server properties
Properties properties = new Properties();
properties.put("mail.smtp.host", host);
properties.put("mail.smtp.port", port);
properties.put("mail.smtp.auth", "true");
properties.put("mail.smtp.starttls.enable", "true");
Authenticator auth = new Authenticator() { () {
```

```
public PasswordAuthentication getPasswordAuthentication() {

return new PasswordAuthentication(userName, password);

}

};

Session session = Session.getInstance(properties, auth);

// creates a new e-mail message

Message msg = new MimeMessage(session);

msg.setFrom(new InternetAddress(userName));

InternetAddress[] toAddresses = { new InternetAddress(toAddress) };

msg.setRecipients(Message.RecipientType.TO, toAddresses);

msg.setSubject(subject);

msg.setSentDate(new Date());

msg.setText(message);

// sends the e-mail

Transport.send(msg);

}

}
```

2. Code E-mail form in JSP

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"

pageEncoding="ISO-8859-1"%>

<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">

<title>Send an e-mail</title>
```

```
</head>

<body>

<form action="EmailSendingServlet" method="post">

<table border="0" width="35%" align="center">

<caption><h2>Send New E-mail</h2></caption>

<tr>

<td width="50%">Recipient address </td>

<td><input type="text" name="recipient" size="50"/></td>

</tr>

<tr>

<td>Subject </td>

<td><input type="text" name="subject" size="50"/></td>

</tr>

<tr>

<td>Content </td>

<td><textarea rows="10" cols="39" name="content"></textarea> </td>

</tr>

<tr>

<td colspan="2" align="center"><input type="submit"
value="Send"/></td>

</tr>

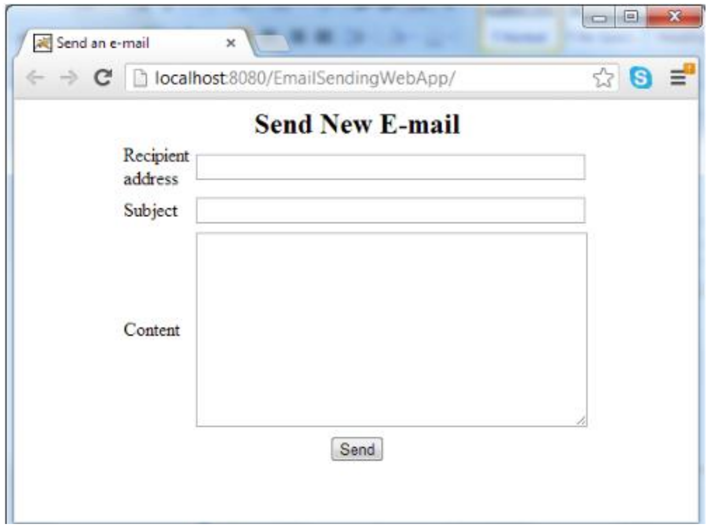
</table>

</form>

</body>

</html>
```

<u>Output</u>



3. Code Java Servlet for sending e-mail

<u>EmailSendingServlet.java</u>

```
package net.codejava.email;

import java.io.IOException;

import javax.servlet.ServletContext;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/EmailSendingServlet")

public class EmailSendingServlet extends HttpServlet {

private String host;

private String port;

private String user;

private String pass;

public void init() {

// reads SMTP server setting from web.xml file
```

```
ServletContext context = getServletContext();
host = context.getInitParameter("host");
port = context.getInitParameter("port");
user = context.getInitParameter("user");
pass = context.getInitParameter("pass");
}
protected void doPost(HttpServletRequest request,
HttpServletResponse response) throws ServletException, IOException {
// reads form fields
String recipient = request.getParameter("recipient");
String subject = request.getParameter("subject");
String content = request.getParameter("content");
String resultMessage = "";
try {
EmailUtility.sendEmail(host, port, user, pass, recipient, subject,
content);
resultMessage = "The e-mail was sent successfully";
} catch (Exception ex) {
ex.printStackTrace();
resultMessage = "There were an error: " + ex.getMessage();
} finally {
request.setAttribute("Message", resultMessage);
getServletContext().getRequestDispatcher("/Result.jsp").forward(
request, response);
}
}
}
```

4. Configuring SMTP server

// configure the settings for SMTP server in the web deployment descriptor file (web.xml) as follows:

```
<?xml version="1.0" encoding="UTF-8"?>

<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xmlns="http://java.sun.com/xml/ns/javaee"

xmlns:web="http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd"

xsi:schemaLocation="http://java.sun.com/xml/ns/javaee

http://java.sun.com/xml/ns/javaee/web-app_3_0.xsd"

id="WebApp_ID" version="3.0">

<display-name>EmailSendingWebApp</display-name>

<!-- SMTP settings -->

<context-param>

<param-name>host</param-name>

<param-value>smtp.gmail.com</param-value>

</context-param>

<context-param>

<param-name>port</param-name>

<param-value>587</param-value>

</context-param>

<context-param>

<param-name>user</param-name>

<param-value>YOUR_EMAIL</param-value>

</context-param>

<context-param>

<param-name>pass</param-name>

<param-value>YOUR_PASSWORD</param-value>
```

```
</context-param>


<welcome-file-list>

<welcome-file>EmailForm.jsp</welcome-file>

</welcome-file-list>

</web-app>
```

5. Code JSP result page

Result.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"

pageEncoding="ISO-8859-1"%>

<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"

"http://www.w3.org/TR/html4/loose.dtd">

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">

<title>Result</title>

</head>

<body>

<center>

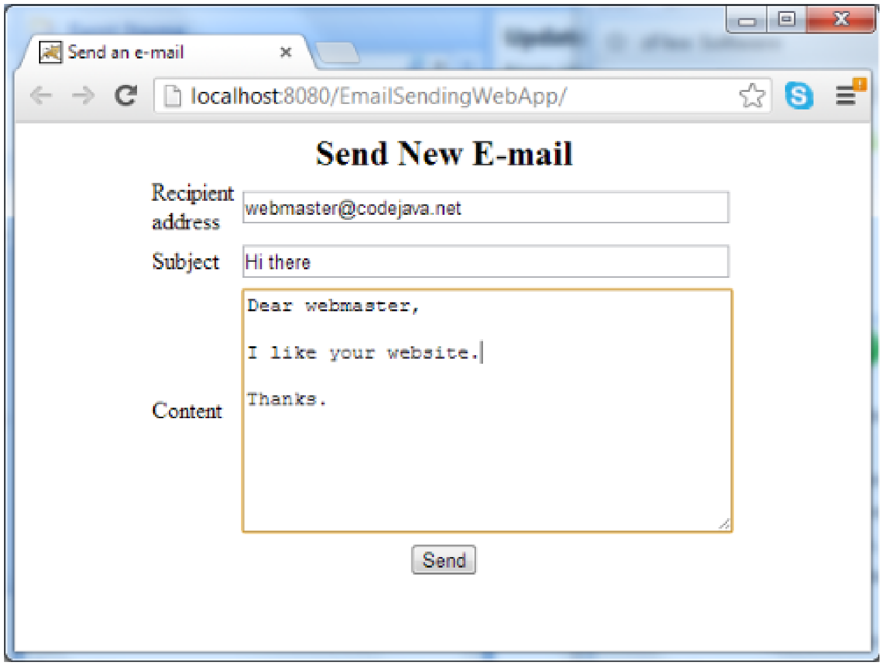
<h3><%=request.getAttribute("Message")%></h3>

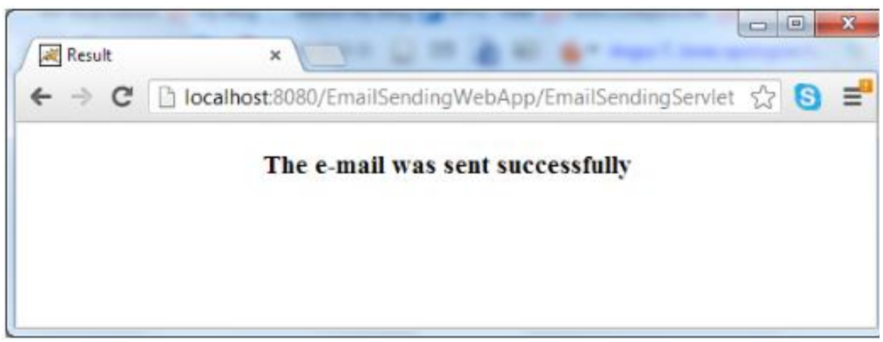
</center>

</body>

</html>
```

OUTPUT:





Write a program for authentication page using Session Handling in web application

//Deployment descriptor **<u>web.xml</u>** of the web application

```
<?xml version="1.0" encoding="UTF-8"?>

<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://java.sun.com/xml/ns/javaee"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee

http://java.sun.com/xml/ns/javaee/web-app_3_0.xsd" id="WebApp_ID"
version="3.0">

<display-name>ServletCookieExample</display-name>

<welcome-file-list>
```

```
<welcome-file>login.html</welcome-file>
</welcome-file-list>
</web-app>
```

login.html

```
<!DOCTYPE html>
<html>
<head>
<meta charset="US-ASCII">
<title>Login Page</title>
</head>
<body>
<form action="LoginServlet" method="post">
Username: <input type="text" name="user">
<br>Password: <input type="password" name="pwd"><br>
<input type="submit" value="Login">
</form>
</body>
</html>
```

LoginServlet.java

```
package com.journaldev.servlet.session;
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.RequestDispatcher;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.Cookie;
```

```
import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;


/**

* Servlet implementation class LoginServlet

*/

@WebServlet("/LoginServlet")

public class LoginServlet extends HttpServlet {

private static final long serialVersionUID = 1L;

private final String userID = "Pankaj";

private final String password = "journaldev";

protected void doPost(HttpServletRequest request,

HttpServletResponse response) throws ServletException, IOException {


// get request parameters for userID and password

String user = request.getParameter("user");

String pwd = request.getParameter("pwd");


if(userID.equals(user) && password.equals(pwd)){

Cookie loginCookie = new Cookie("user",user);

//setting cookie to expiry in 30 mins

loginCookie.setMaxAge(30*60);

response.addCookie(loginCookie);

response.sendRedirect("LoginSuccess.jsp");

}
else
```

```
{
RequestDispatcher rd =
getServletContext().getRequestDispatcher("/login.html");
PrintWriter out= response.getWriter();
out.println("<font color=red>Either user name or password is
wrong.</font>");
rd.include(request, response);
}
}
}
```

<u>LoginSuccess.jsp</u>

```
// timeout is set to 30 minutes
<%@ page language="java" contentType="text/html; charset=US-ASCII"
pageEncoding="US-ASCII"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01
Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=US-
ASCII">
<title>Login Success Page</title>
</head>
<body>
<%
String userName = null;
Cookie[] cookies = request.getCookies();
if(cookies !=null){
for(Cookie cookie : cookies){
```

```
if(cookie.getName().equals("user")) userName = cookie.getValue();
}
}
if(userName == null) response.sendRedirect("login.html");
%>
<h3>Hi <%=userName %>, Login successful.</h3>
<br>
<form action="LogoutServlet" method="post">
<input type="submit" value="Logout" >
</form>
</body>
</html>
```

LogoutServlet.java

```
package com.journaldev.servlet.session;
import java.io.IOException;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
/**
* Servlet implementation class LogoutServlet
*/
@WebServlet("/LogoutServlet")
public class LogoutServlet extends HttpServlet {
```

```
private static final long serialVersionUID = 1L;

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

response.setContentType("text/html");

Cookie loginCookie = null;

Cookie[] cookies = request.getCookies();

if(cookies != null){

for(Cookie cookie : cookies){

if(cookie.getName().equals("user")){

loginCookie = cookie;

break;

}

}

}

if(loginCookie != null){

loginCookie.setMaxAge(0);

response.addCookie(loginCookie);

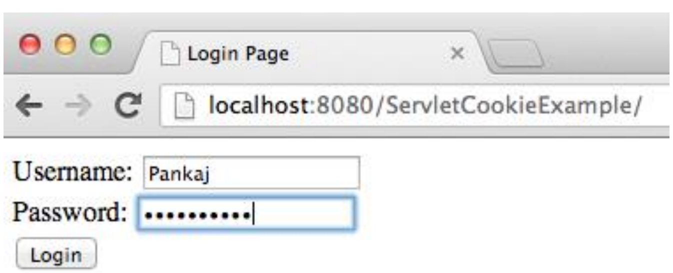
}

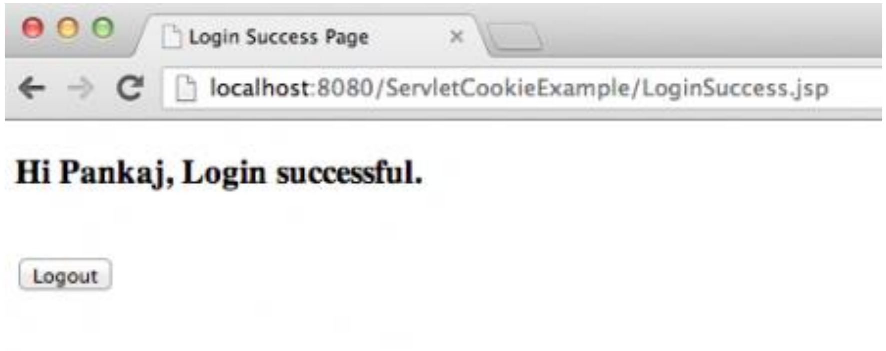
response.sendRedirect("login.html");

}

}
```

<u>Output:</u>





LoginServlet.java

```
package com.journaldev.servlet.session;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.RequestDispatcher;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.Cookie;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import javax.servlet.http.HttpSession;

public class LoginServlet extends HttpServlet {

private static final long serialVersionUID = 1L;

private final String userID = "admin";

private final String password = "password";

protected void doPost(HttpServletRequest request,

HttpServletResponse response) throws ServletException, IOException {

String user = request.getParameter("user");

String pwd = request.getParameter("pwd");
```

```
if(userID.equals(user) && password.equals(pwd)){

HttpSession session = request.getSession();

session.setAttribute("user", "Pankaj");

//setting session to expiry in 30 mins

session.setMaxInactiveInterval(30*60);

Cookie userName = new Cookie("user", user);

userName.setMaxAge(30*60);

response.addCookie(userName);

response.sendRedirect("LoginSuccess.jsp");

}else{

RequestDispatcher rd =
getServletContext().getRequestDispatcher("/login.html");

PrintWriter out= response.getWriter();

out.println("<font color=red>Either user name or password is
wrong.</font>");

rd.include(request, response);

}

}

}
```

<u>LoginSuccess.jsp</u>

```
<%@ page language="java" contentType="text/html; charset=US-ASCII"

pageEncoding="US-ASCII"%>

<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01
Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=US-
ASCII">
```

```
<title>Login Success Page</title>

</head>

<body>

//allow access only if session exists

String user = null;

if(session.getAttribute("user") == null){

response.sendRedirect("login.html");

}else user = (String) session.getAttribute("user");

String userName = null;

String sessionID = null;

Cookie[] cookies = request.getCookies();

if(cookies !=null){

for(Cookie cookie : cookies){

if(cookie.getName().equals("user")) userName = cookie.getValue();

if(cookie.getName().equals("JSESSIONID")) sessionID =
cookie.getValue();

}

}

%>

<h3>Hi <%=userName %>, Login successful. Your Session
ID=<%=sessionID %></h3>

<br>

User=<%=user %>

<br>

<a href="CheckoutPage.jsp">Checkout Page</a>

<form action="LogoutServlet" method="post">

<input type="submit" value="Logout" >
```

```
</form>

</body>

</html>
```

CheckoutPage.jsp

```
<%@ page language="java" contentType="text/html; charset=US-ASCII"

pageEncoding="US-ASCII"%>

<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01
Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=US-
ASCII">

<title>Login Success Page</title>

</head>

<body>

<%

<%

//allow access only if session exists

if(session.getAttribute("user") == null){

response.sendRedirect("login.html");

}

String userName = null;

String sessionID = null;

Cookie[] cookies = request.getCookies();

if(cookies !=null){

for(Cookie cookie : cookies){

if(cookie.getName().equals("user")) userName = cookie.getValue();
```

```
}
}
%>
<h3>Hi <%=userName %>, do the checkout.</h3>
<br>
<form action="LogoutServlet" method="post">
<input type="submit" value="Logout" >
</form>
</body>
</html>
```

LogoutServlet.java

```
package com.journaldev.servlet.session;
import java.io.IOException;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
/**
* Servlet implementation class LogoutServlet
*/
@WebServlet("/LogoutServlet")
public class LogoutServlet extends HttpServlet {
private static final long serialVersionUID = 1L;
```

```
protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

response.setContentType("text/html");

Cookie[] cookies = request.getCookies();

if(cookies != null){

for(Cookie cookie : cookies){

if(cookie.getName().equals("JSESSIONID")){

System.out.println("JSESSIONID="+cookie.getValue());

break;

}

}

}

//invalidate the session if exists

HttpSession session = request.getSession(false);

System.out.println("User="+session.getAttribute("user"));

if(session != null){

session.invalidate();

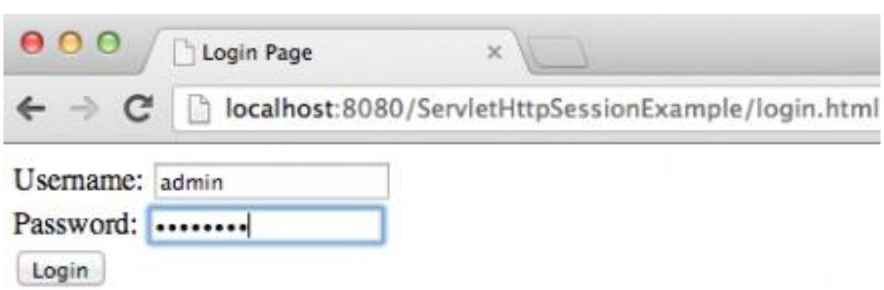
}

response.sendRedirect("login.html");

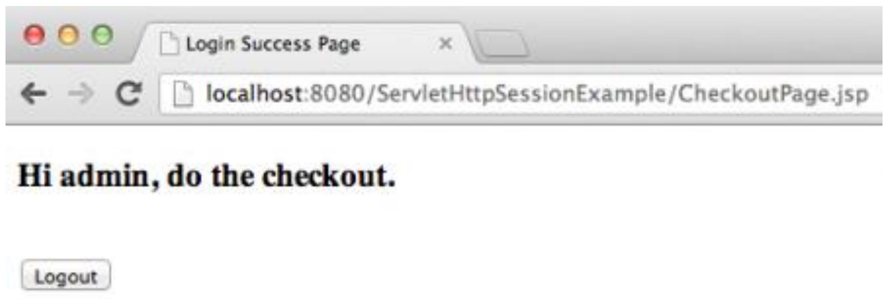
}

}
```

Output:







21. Write the program for cookies manipulation in user login page using Getting and setting Cookies

<u>index.html</u>

```
<form action="login">

User Name:<input type="text" name="userName"/><br/>

Password:<input type="password" name="userPassword"/><br/>

<input type="submit" value="submit"/>

</form>
```

<u>MyServlet1.java</u>

```
import java.io.*;

import javax.servlet.*;

import javax.servlet.http.*;

public class MyServlet1 extends HttpServlet

{

public void doGet(HttpServletRequest request,

HttpServletResponse response) {

try{
```

```
response.setContentType("text/html");

PrintWriter pwriter = response.getWriter();

String name = request.getParameter("userName");

String password = request.getParameter("userPassword");

pwriter.print("Hello "+name);

pwriter.print("Your Password is: "+password);

//Creating two cookies

Cookie c1=new Cookie("userName",name);

Cookie c2=new Cookie("userPassword",password);

//Adding the cookies to response header

response.addCookie(c1);

response.addCookie(c2);

pwriter.print("<br><a href='welcome'>View Details</a>");

pwriter.close();

}catch(Exception exp){

System.out.println(exp);

}

}

}
```

<u>MyServlet2.java</u>

```
import java.io.*;

import javax.servlet.*;

import javax.servlet.http.*;

public class MyServlet2 extends HttpServlet {

public void doGet(HttpServletRequest request,

HttpServletResponse response){
try{
```

```
Cookie c[]=request.getCookies();
//Displaying User name value from cookie
pwriter.print("Name: "+c[1].getValue());
//Displaying user password value from cookie
pwriter.print("Password: "+c[2].getValue());
pwriter.close();
}catch(Exception exp){
System.out.println(exp);
}
}
}
```

web.xml

```
<web-app>
<display-name>BeginnersBookDemo</display-name>
<welcome-file-list>
<welcome-file>index.html</welcome-file>
</welcome-file-list>
<servlet>
<servlet-name>Servlet1</servlet-name>
<servlet-class>MyServlet1</servlet-class>
</servlet>
<servlet-mapping>
<servlet-name>Servlet1</servlet-name>
<url-pattern>/login</url-pattern>
</servlet-mapping>
<servlet>
```

```
<servlet-name>Servlet2</servlet-name>

<servlet-class>MyServlet2</servlet-class>

</servlet>

<servlet-mapping>

<servlet-name>Servlet2</servlet-name>

<url-pattern>/welcome</url-pattern>

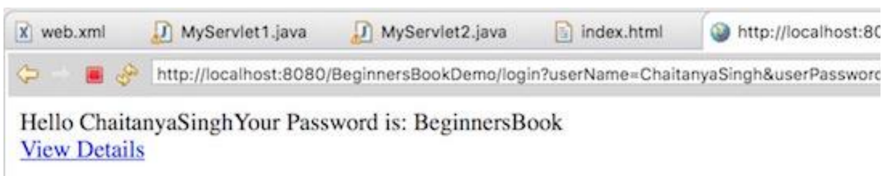
</servlet-mapping>

</web-app>
```

<u>Welcome Screen</u>



<u>After clicking Submit</u>



<u>After clicking View Details</u>



21. write a simple Registration rjsp program

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"

pageEncoding="ISO-8859-1"%>

<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
```

```
<head>

<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">

<title>Guru Success Page</title>

</head>

<body>

<a><b>Welcome User!!!!</b></a>

</body>

</html>
```

Registration.java

```
 package demotest;

import java.io.IOException;

import javax.servlet.RequestDispatcher;

import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

/**

* Servlet implementation class guru_register

public class guru_register extends HttpServlet {

private static final long serialVersionUID = 1L;

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

// TODO Auto-generated method stub

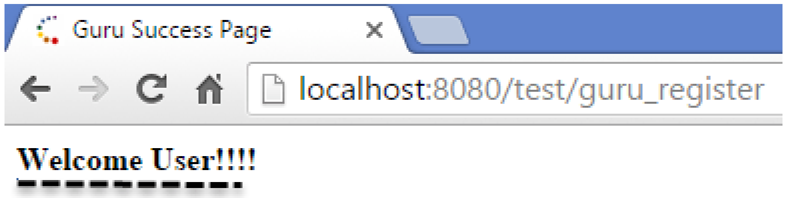
String first_name = request.getParameter("first_name");

String last_name = request.getParameter("last_name");
*/
```

```
String username = request.getParameter("username");
String password = request.getParameter("password");
String address = request.getParameter("address");
String contact = request.getParameter("contact");
if(first_name.isEmpty() || last_name.isEmpty() || username.isEmpty() ||
password.isEmpty() || address.isEmpty() || contact.isEmpty())
{
RequestDispatcher req = request.getRequestDispatcher("register_1.jsp");
req.include(request, response);
}
else
{
RequestDispatcher req = request.getRequestDispatcher("register_2.jsp");
req.forward(request, response);
}
}
}
```

Output





22. Write a JSP program for Registration form using JDBC

Registration page (registration.jsp)

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-
1"
pageEncoding="ISO-8859-1"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01
Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-
1">
<title>User Data</title>
</head>
<style>
div.ex {
text-align: right width:300px;
padding: 10px;
border: 5px solid grey;
margin: 0px
}
</style>
<body>
<h1>Registration Form</h1>
<div class="ex">
<form action="RegistrationController" method="post">
<table style="with: 50%">
<tr>
```

```
<td>Full Name</td>
<td><input type="text" name="fullname" /></td>
</tr>
<tr>
<td>Username</td>
<td><input type="text" name="userName" /></td>
</tr>
<tr>
<td>Password</td>
<td><input type="password" name="pass" /></td>
</tr>
<tr>
<td>Address</td>
<td><input type="text" name="address" /></td>
</tr>
<tr>
<td>Age</td>
<td><input type="text" name="age" /></td>
</tr>
<tr>
<td>Qualification</td>
<td><input type="text" name="qual" /></td>
</tr>
<tr>
<td>Percentage</td>
<td><input type="text" name="percent" /></td>
</tr>
<tr>
<td>Year Passed</td>
<td><input type="text" name="yop" /></td>
</tr>
</table>
<input type="submit" value="register" />
</form>
```

```
<br>
create a student table in test database before registering this form
<br> Syntax : <br>
<i>create table student(name varchar(100), userName varchar(100), pass
varchar(100), addr varchar(100), age int, qual varchar(100), percent
varchar(100), year varchar(100));</i>
</div>
</body>
</html>
```

web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://java.sun.com/xml/ns/javaee"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee

http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd"
id="WebApp_ID" version="2.5">
<display-name>registration</display-name>
<welcome-file-list>
<welcome-file>registration.jsp</welcome-file>
</welcome-file-list>
<servlet>
<description></description>
<display-name>RegistrationController</display-name>
<servlet-name>RegistrationController</servlet-name>
<servlet-class>com.candidjava.RegistrationController</servlet-class>
</servlet>
<servlet-mapping>
<servlet-name>RegistrationController</servlet-name>
<url-pattern>/RegistrationController</url-pattern>

</servlet-mapping>
</web-app>
```

RegistrationController.java

```
import java.io.IOException;
import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.SQLException;

import javax.servlet.RequestDispatcher;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

/**
 * Servlet implementation class UserDataServlet
 */
public class RegistrationController extends HttpServlet {
protected void doPost(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
  // TODO Auto-generated method stub
  response.setContentType("text/html");
  PrintWriter out = response.getWriter();
  String name = request.getParameter("fullname");
  String userName = request.getParameter("userName");
  String userName = request.getParameter("userName");
  String pass = request.getParameter("pass");
  String addr = request.getParameter("address");
  String age = request.getParameter("age");
  String qual = request.getParameter("qual");
  String percent = request.getParameter("percent");
  String year = request.getParameter("yop");

  // validate given input
  if (name.isEmpty() || addr.isEmpty() || age.isEmpty() || qual.isEmpty() ||
percent.isEmpty() || year.isEmpty()) {
   RequestDispatcher rd =
request.getRequestDispatcher("registration.jsp");
out.println("<font color=red>Please fill all the fields</font>");
   rd.include(request, response);
  } else {
```

```
  try {
   Class.forName("com.mysql.jdbc.Driver");
   // loads mysql driver
   Connection con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/test", "root",
"root");
   String query = "insert into student values(?,?,?,?,?,?,?,?)";
   PreparedStatement ps = con.prepareStatement(query); // generates sql
query
   ps.setString(1, name);
   ps.setString(2, userName);
   ps.setString(3, pass);
   ps.setString(4, addr);
   ps.setInt(5, Integer.parseInt(age));
   ps.setString(6, qual);
   ps.setString(7, percent);
   ps.setString(8, year);

   ps.executeUpdate(); // execute it on test database
   System.out.println("successfuly inserted");
   ps.close();
   con.close();
  } catch (ClassNotFoundException | SQLException e) {
   // TODO Auto-generated catch block
   e.printStackTrace();
  }
  RequestDispatcher rd = request.getRequestDispatcher("home.jsp");
  rd.forward(request, response);
 }
}
}
```

<u>Success page (home.jsp)</u>

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-
1"
   pageEncoding="ISO-8859-1"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01
Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-
1">
<title>Display</title>
<style>
```

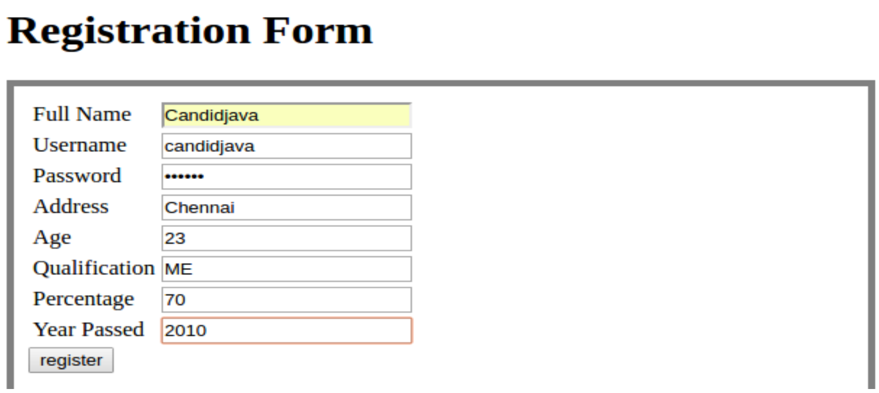
```
table#nat{
        width: 50%;
        background-color: #c48ec5;
}
</style>
</head>
<body>
<%
        String name =  request.getParameter("fullname");
        String userName = request.getParameter("userName");
        String pass = request.getParameter("pass");
        String addr = request.getParameter("address");
        String age = request.getParameter("age");
        String qual = request.getParameter("qual");
        String percent = request.getParameter("percent");
        String year = request.getParameter("yop");
%>
<table id ="nat">
<tr>
        <td>Full Name</td>
        <td><%= name %></td>
</tr>
<tr>
        <td>User Name</td>
        <td><%= userName %></td>
</tr>

<tr>
        <td>Address</td>
        <td><%= addr %></td></tr>
<tr>
        <td>Age</td>

<td><%= age %></td>
</tr>
<tr>
        <td>Qualification</td>
        <td><%= qual %></td>
</tr>
<tr>
<td>Percentage</td>
        <td><%= percent %></td>
</tr>
<tr>
        <td>Year of Passout</td>
```

```
<td><%= year %></td>
</tr>
</table>
<br>
use " <i> select * from student; </i> " in mysql client to verify it.
</body>
</html>
```

OUTPUT:



Full Name	Candidjava
User Name	candidjava
Address	Chennai
Age	23
Qualification	ME
Percentage	70
Year of Passout	2010

23. Develop an Application for JSP-Servlet Communication

Crunchify.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"

pageEncoding="ISO-8859-1"%>

<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"

"http://www.w3.org/TR/html4/loose.dtd">

<html>
```

```
background-image:

url('https://cdn.crunchify.com/wp-content/uploads/2013/03/Crunchify.bg_.300.png');

}

</style>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">

<title>Crunchify JSP Servlet Example</title>

</head>

<body>

<div align="center" style="margin-top: 50px;">


<form action="CrunchifyServlet">

Please enter your Username:  <input type="text" name="username" size="20px"> <br>

Please enter your Password:  <input type="text" name="password" size="20px"> <br><br>

<input type="submit" value="submit">

</form>

</div>

</body>

</html>

</html>
```

<u>HelloCrunchify.java</u>

```
package com.crunchify.jsp.servlet;

import java.io.IOException;

import javax.servlet.ServletException;
```

```
import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import java.io.PrintWriter;

public class HelloCrunchify extends HttpServlet {

protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {

// reading the user input

String username = request.getParameter("username");

String password = request.getParameter("password");

PrintWriter out = response.getWriter();

out.println (

"<!DOCTYPE html PUBLIC \"-//W3C//DTD HTML 4.01
Transitional//EN\" +" +

"http://www.w3.org/TR/html4/loose.dtd\">\n" +

"<html> \n" +

"<head> \n" +

"<meta http-equiv=\"Content-Type\" content=\"text/html; " +

"charset=ISO-8859-1\"> \n" +

"<title> Crunchify.com JSP Servlet Example  </title> \n" +

"</head> \n" +

"<body> <div align='center'> \n" +

"<style= \"font-size=\"12px\" color='black'\"" + "\">" +

"Username: " + username + " <br> " +

"Password: " + password +

"</font></body> \n" +

"</html>"
```

```
);
}
}
```

Web.xml:

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://java.sun.com/xml/ns/javaee"
xmlns:web="http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/web-app_3_0.xsd"
version="3.0">
<display-name>CrunchifyJSPServletExample</display-name>
<welcome-file-list>
<welcome-file>index.html</welcome-file>
<welcome-file>index.htm</welcome-file>
<welcome-file>index.jsp</welcome-file>
<welcome-file>default.html</welcome-file>
<welcome-file>default.htm</welcome-file>
<welcome-file>default.jsp</welcome-file>
</welcome-file-list>
<servlet>
<servlet-name>Hello</servlet-name>
<servlet-class>com.crunchify.jsp.servlet.HelloCrunchify</servlet-class>
</servlet>
<servlet-mapping>
<servlet-name>Hello</servlet-name>
<url-pattern>/CrunchifyServlet</url-pattern>
```

```
</servlet-mapping>

</web-app>
```

Output:



24. write a program for Database connectivity using console

```
 import java.sql.*;
class EmployeeRecord
{
    public static final String DBURL = 
"jdbc:oracle:thin:@localhost:1521:XE";
    public static final String DBUSER = "local";
    public static final String DBPASS = "test";
    public static void main(String args[])
    {
        try
        {
            //Loading the driver
            Class.forName("oracle.jdbc.driver.OracleDriver");
            //Cretae the connection object
            Connection con = DriverManager.getConnection(DBURL, 
DBUSER, DBPASS);
            //Insert the record
            String sql = "INSERT INTO emp (emp_id, empname, email, 
city) VALUES (?, ?, ?, ?)";
            PreparedStatement statement = con.prepareStatement(sql);
            statement.setInt(1, 100);
            statement.setString(2, "Prashant");
            statement.setString(3, "prasant@saxena.com");
            statement.setString(4, "Pune");

            int rowsInserted = statement.executeUpdate();
            if (rowsInserted > 0)
            {
```

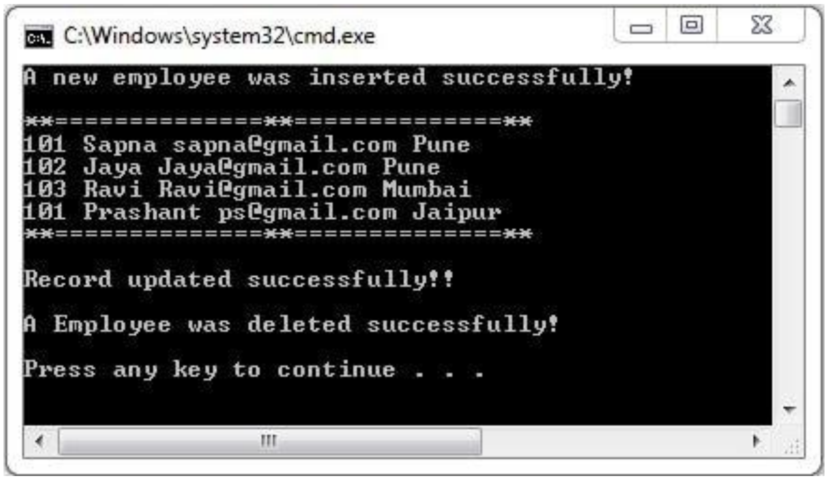
```
System.out.println("A new employee was inserted successfully!\n");
            }
            // Display the record
            String sql1 = "SELECT * FROM Emp";
            Statement stmt = con.createStatement();
            ResultSet result = stmt.executeQuery(sql1);

            while (result.next())
            {
                System.out.println (result.getInt(1)+" "+
                result.getString(2)+" "+
                result.getString(3)+" "+
                result.getString(4));
            }

            //Update the record
            String sql2 = "Update Emp set email = ? where empname = ?";
            PreparedStatement pstmt = con.prepareStatement(sql2);
            pstmt.setString(1, "Jaya@gmail.com");
            pstmt.setString(2, "Jaya");
            int rowUpdate = pstmt.executeUpdate();
            if (rowUpdate > 0)
            {
                System.out.println("\nRecord updated successfully!!\n");
            }
            //Delete the record
            String sql3 = "DELETE FROM Emp WHERE empname=?";
            PreparedStatement statement1 = con.prepareStatement(sql3);
            statement1.setString(1, "Prashant");

            int rowsDeleted = statement1.executeUpdate();
            if (rowsDeleted > 0)
            {
                System.out.println("A Employee was deleted
successfully!\n");
            }
        }
        catch(Exception ex)
        {
            ex.printStackTrace();
        }
}
}
```

Output



25. Database Programming using JDBC(Create, Read,Update, Delete)

index.html

```
<!DOCTYPE html>

<html>

<head>

<meta charset="ISO-8859-1">

<title>Insert title here</title>

</head>

<body>

<h1>Add New Employee</h1>

<form action="SaveServlet" method="post">

<table>

<tr><td>Name:</td><td><input type="text" name="name"/></td
></tr>

<tr><td>Password:</td><td><input type="password" name="pass
word"/></td></tr>

<tr><td>Email:</td><td><input type="email" name="email"/></t
d></tr>

<tr><td>Country:</td><td>

<select name="country" style="width:150px">
<option>India</option>
```

```
<option>India</option>
<option>USA</option>
<option>UK</option>
<option>Other</option>
</select>
</td></tr>
<tr><td colspan="2"><input type="submit" value="Save Employe
e"/></td></tr>
</table>
</form>
<br/>
<a href="ViewServlet">view employees</a>
</body>
</html>
```

Emp.java

```
public class Emp {
private int id;
private String name,password,email,country;
public int getId() {
return id;
}
public void setId(int id) {
this.id = id;
}
public String getName() {
return name;
}
```

```
public void setName(String name) {
this.name = name;
}
public String getPassword() {
return password;
}
public void setPassword(String password) {
this.password = password;
}
public String getEmail() {
return email;
}
public void setEmail(String email) {
this.email = email;
}
public String getCountry() {
return country;
}
public void setCountry(String country) {
this.country = country;
}
}
```

EmpDao.java

```
import java.util.*;
import java.sql.*;
public class EmpDao {
```

```
public static Connection getConnection(){

Connection con=null;

try{

Class.forName("oracle.jdbc.driver.OracleDriver");

con=DriverManager.getConnection("jdbc:oracle:thin:@localhost:
1521:xe","system","oracle");

}catch(Exception e){System.out.println(e);}

return con;

}

public static int save(Emp e){

int status=0;

try{

Connection con=EmpDao.getConnection();

PreparedStatement ps=con.prepareStatement(

"insert into user905(name,password,email,country) values (?,?,?,?)
");

ps.setString(1,e.getName());

ps.setString(2,e.getPassword());

ps.setString(3,e.getEmail());

ps.setString(4,e.getCountry());

status=ps.executeUpdate();

con.close();

}catch(Exception ex){ex.printStackTrace();}

return status;

}

public static int update(Emp e){

int status=0;
```

```
try{
Connection con=EmpDao.getConnection();
PreparedStatement ps=con.prepareStatement(
"update user905 set name=?,password=?,email=?,country=? wher
e id=?");
ps.setString(1,e.getName());
ps.setString(2,e.getPassword());
ps.setString(3,e.getEmail());
ps.setString(4,e.getCountry());
ps.setInt(5,e.getId());
status=ps.executeUpdate();
con.close();
}catch(Exception ex){ex.printStackTrace();}
return status;
}
public static int delete(int id){
int status=0;
try{
Connection con=EmpDao.getConnection();
PreparedStatement ps=con.prepareStatement("delete from user905
 where id=?");
ps.setInt(1,id);
status=ps.executeUpdate();
con.close();
}catch(Exception e){e.printStackTrace();}
return status;
}
```

```
public static Emp getEmployeeById(int id){

Emp e=new Emp();

try{

Connection con=EmpDao.getConnection();

PreparedStatement ps=con.prepareStatement("select * from user9
05 where id=?");

ps.setInt(1,id);

ResultSet rs=ps.executeQuery();

if(rs.next()){

e.setId(rs.getInt(1));

e.setName(rs.getString(2));

e.setPassword(rs.getString(3));

e.setEmail(rs.getString(4));

e.setCountry(rs.getString(5));

}

con.close();

}catch(Exception ex){ex.printStackTrace();}

return e;

}

public static List<Emp> getAllEmployees(){

List<Emp> list=new ArrayList<Emp>();

try{

Connection con=EmpDao.getConnection();

PreparedStatement ps=con.prepareStatement("select * from user9
05");

ResultSet rs=ps.executeQuery();

while(rs.next()){
```

```
Emp e=new Emp();
e.setId(rs.getInt(1));
e.setName(rs.getString(2));
e.setPassword(rs.getString(3));
e.setEmail(rs.getString(4));
e.setCountry(rs.getString(5));
list.add(e);
}
con.close();
}catch(Exception e){e.printStackTrace();}

return list;
}
}
```

SaveServlet.java

```
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
@WebServlet("/SaveServlet")
public class SaveServlet extends HttpServlet {
protected void doPost(HttpServletRequest request, HttpServletRes
ponse response)
throws ServletException, IOException {
```

```
response.setContentType("text/html");

PrintWriter out=response.getWriter();

String name=request.getParameter("name");

String password=request.getParameter("password");

String email=request.getParameter("email");

String country=request.getParameter("country");

Emp e=new Emp();

e.setName(name);

e.setPassword(password);

e.setEmail(email);

e.setCountry(country);

int status=EmpDao.save(e);

if(status>0){

out.print("<p>Record saved successfully!</p>");

request.getRequestDispatcher("index.html").include(request, resp
onse);

}else{

out.println("Sorry! unable to save record");

}

out.close();

}

}
```

EditServlet.java

```
import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;
```

```
import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/EditServlet")

public class EditServlet extends HttpServlet {

protected void doGet(HttpServletRequest request, HttpServletRes
ponse response)

throws ServletException, IOException {

response.setContentType("text/html");

PrintWriter out=response.getWriter();

out.println("<h1>Update Employee</h1>");

String sid=request.getParameter("id");

int id=Integer.parseInt(sid);

Emp e=EmpDao.getEmployeeById(id);

out.print("<form action='EditServlet2' method='post'>");

        out.print("<table>");

out.print("<tr><td></td><td><input type='hidden' name='id' value
='"+e.getId()+"'/></td></tr>");

out.print("<tr><td>Name:</td><td><input type='text' name='nam
e' value='"+e.getName()+"'/></td></tr>");

out.print("<tr><td>Password:</td><td><input type='password' na
me='password' value='"+e.getPassword()+"'/>

</td></tr>");

out.print("<tr><td>Email:</td><td><input type='email' name='em
ail' value='"+e.getEmail()+"'/></td></tr>");

out.print("<tr><td>Country:</td><td>");

out.print("<select name='country' style='width:150px'>");

out.print("<option>India</option>");
```

```
out.print("<option>USA</option>");
out.print("<option>UK</option>");
out.print("<option>Other</option>");
out.print("</select>");
out.print("</td></tr>");
out.print("<tr><td colspan='2'><input type='submit' value='Edit &
 Save '/></td></tr>");
out.print("</table>");
out.print("</form>");
out.close();
}
}
```

EditServlet2.java

```
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
@WebServlet("/EditServlet2")
public class EditServlet2 extends HttpServlet {
protected void doPost(HttpServletRequest request, HttpServletRes
ponse response)
throws ServletException, IOException {
response.setContentType("text/html");
PrintWriter out=response.getWriter();
String sid=request.getParameter("id");
```

```
int id=Integer.parseInt(sid);
String name=request.getParameter("name");
String password=request.getParameter("password");
String email=request.getParameter("email");
String country=request.getParameter("country");
Emp e=new Emp();
e.setId(id);
e.setName(name);
e.setPassword(password);
e.setEmail(email);
e.setCountry(country);
int status=EmpDao.update(e);
if(status>0){
response.sendRedirect("ViewServlet");
}else{
out.println("Sorry! unable to update record");
}
out.close();
}
}
```

DeleteServlet.java

```
import java.io.IOException;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
```

```
import javax.servlet.http.HttpServletResponse;
@WebServlet("/DeleteServlet")
public class DeleteServlet extends HttpServlet {
protected void doGet(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
String sid=request.getParameter("id");
        int id=Integer.parseInt(sid);
EmpDao.delete(id);
response.sendRedirect("ViewServlet");
}
}
```

ViewServlet.java

```
import java.io.IOException;
import java.io.PrintWriter;
import java.util.List;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
@WebServlet("/ViewServlet")
public class ViewServlet extends HttpServlet {
protected void doGet(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
response.setContentType("text/html");
```

```
PrintWriter out=response.getWriter();

out.println("<a href='index.html'>Add New Employee</a>");

out.println("<h1>Employees List</h1>");

List<Emp> list=EmpDao.getAllEmployees();

out.print("<table border='1' width='100%'");

out.print("<tr><th>Id</th><th>Name</th><th>Password</th><th
>Email</th><th>Country</th>

<th>Edit</th><th>Delete</th></tr>");

for(Emp e:list){

out.print("<tr><td>"+e.getId()+"</td><td>"+e.getName()+"</td>
<td>"+e.getPassword()+"</td>

<td>"+e.getEmail()+"</td><td>"+e.getCountry()+"</td><td><a h
ref='EditServlet?id="+e.getId()+"'>edit</a></td>

<td><a href='DeleteServlet?id="+e.getId()+"'>delete</a></td></tr
>");

}

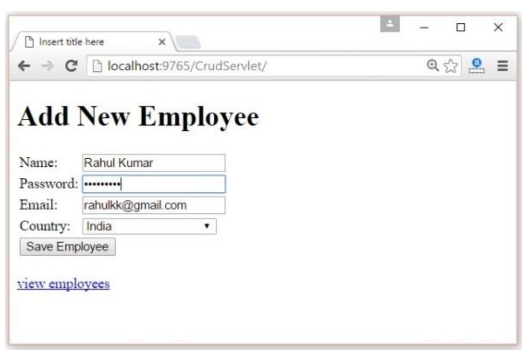
out.print("</table>");

out.close();

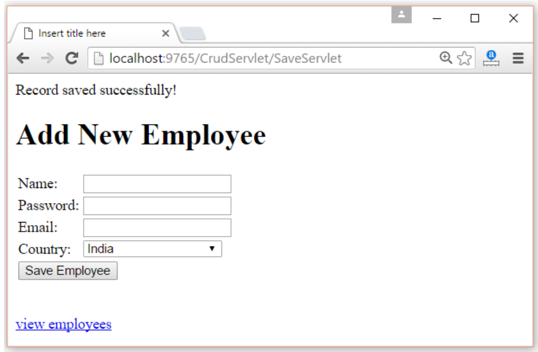
}
```

Output:

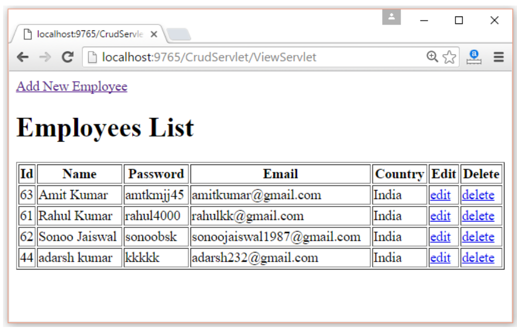
Fill the new Record and submit it into database



New Record Inserted Into Database

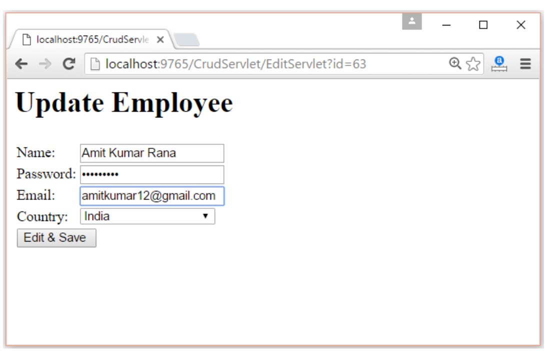


Recorded List in Database

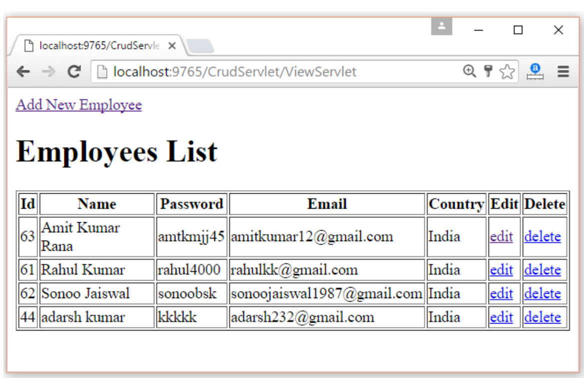


Id	Name	Password	Email	Country	Edit	Delete
63	Amit Kumar	amtkmjj45	amitkumar@gmail.com	India	edit	delete
61	Rahul Kumar	rahul4000	rahulkk@gmail.com	India	edit	delete
62	Sonoo Jaiswal	sonoobsk	sonoojaiswal1987@gmail.com	India	edit	delete
44	adarsh kumar	kkkkk	adarsh232@gmail.com	India	edit	delete

Change or Update the Existing Data



Updated Data in Database



Id	Name	Password	Email	Country	Edit	Delete
63	Amit Kumar Rana	amtkmjj45	amitkumar12@gmail.com	India	edit	delete
61	Rahul Kumar	rahul4000	rahulkk@gmail.com	India	edit	delete
62	Sonoo Jaiswal	sonoobsk	sonoojaiswal1987@gmail.com	India	edit	delete
44	adarsh kumar	kkkkk	adarsh232@gmail.com	India	edit	delete

Delete an Record From Database



localhost:9765/CrudServlet/ViewServlet

Add New Employee

Employees List

Id	Name	Password	Email	Country	Edit	Delete
63	Amit Kumar Rana	amtkmjj45	amitkumar12@gmail.com	India	edit	delete
61	Rahul Kumar	rahul4000	rahulkk@gmail.com	India	edit	delete
62	Sonoo Jaiswal	sonoobsk	sonoojaiswal1987@gmail.com	India	edit	delete